Product Catalog

MultiDyne

Video & Fiber Optic Systems

UTP CAT 5 link for RGB/UXGA Video and Stereo Audio

SUMMARY

The **TP-RGB-1000** transports RGB/UXGA and stereo audio over more than 1000 feet of UTP CAT 5, 5e and 6 cables. The system supports UXGA resolutions of up to 1600 by 1200.

The **TP-RGB-1000** includes automatic equalization and anti-skew technology.
The anti-skew feature permits video transmission over inexpensive data grade twisted pair cable.
Expensive non-skew cable is not required.

The **TP-RGB-1000** receiver unit has a Daisy-Chain or repeater option.
One RGB/UXGA source can be daisy-chanes to multiple monitors.

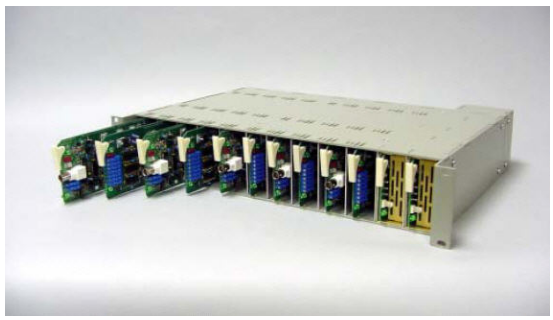
The **TP-RGB-1000** supports computer video graphical input signals on a female 15-pin HD connector and transmits the video on a shielded female RJ-45 connector. The unit also accepts PC audio on a 3.5 mm stereo mini jack.

The **TP-RGB-1000** supports video with 15-130 kHz horizontal scan rate and a 30-150 Hz vertical scan rate.
The system is compatible with nearly every video graphics format.

The transport of high resolution video over long distances on data grade cable causes a problem known as skew.
Skew causes distortion in the image which results in image convergence problems in the Red,
Green and Blue color spaces. One solution is the use expensive non-skew cable.
The **TP-RGB-1000** includes advanced Anti-Skew technology that automatically corrects skew problems and distortion.

Twisted pair transport provides the capability for the separation of a video signal source and the monitor.
For example, a computer or imaging device can be in a different location than the monitors.
In many applications space is limited in the monitor area.
With flat screen technology, very little space is required.
The computers or imaging devices can be in another room.
Systems are available to transport HDMI, DVI or RGB video as well as audio, keyboard and mouse control.
Application include commodity and stock exchanges, medical and MRI displays, advertising and signs, sporting and concert video displays, video walls, digital cinema, radar displays, air traffic control, military information displays plus many more…

AES Re-clocking Distribution Amplifier



SUMMARY

- Supports 1 AES input with 8 re-clocked outputs.
- System supports AES/EBU 110 Ohm Balanced signals.
- Supports up to 96 KHz sampling rates.
- Audio and Optical front panel status indicators with dry alarm relay contacts.
- Universal AC operation for 85-265 VAC and Telco DC operation for 48 VDC.
- Now support analog video, analog audio, serial digital video and digital audio in the same tray.
- Supported by UTIL-200-AUDIO and UTIL-200-AV Trays
- Applications include production, signal distribution, edit suites, duplication, television studio, film, recording studio and many more…

SPECIFICATIONS

Inputs

Balanced, AES3

Input Impedance	110 Ohms, +/-20%, 0.1MHz to 6.0MHz.
Minimum Input Signal	200mV for 50% of cell period.
Maximum Input Signal	10 Vpp.

Unbalanced AES-3 ID

Outputs

Balanced, AES3

Output Impedance	110 Ohms, +/-20%, 0.1MHz to 6.0MHz.
Output Voltage	2.0 to 7.0 Vpp into 110Ohms.
Rise/Fall Time	5 to 30 ns (10% to 90%).
Jitter	<20ns.
Power dissipation	<2 Watts, per unit
AC operation	85 to 265 VAC (optional 48VDC)
Operating temperature	0 to +50 C

Specifications subject to change without notice.

ORDERING INFORMATION

AES-210 AES Re-clocking Distribution Amplifier, 1 by 8, Balanced 110 Ohms, for the UTIL-200-AUDIO and UTIL-200-AV Trays

400 MBps SDI Fiber Optic Transport, Stand-alone or Rack-mount

SUMMARY

Ideal for Serial Digital Interface (SDI) applications at speeds from 143 to 400Mbps.

Supports SMPTE 259M (SDI), DVB-ASI (270Mb/s), 4:2:2 Component, 360 Mbps,/SDH and ATM.

Available for Multimode (DTV-120) and Singlemode (DTV-130) applications.

Supports embedded audio and data. Audio and data must be embedded externally.

Full compatible with the modular DTV-225 and DTV-235 cards.

For data rates from 19.4 to 540 Mbps, see the data sheet for the DTV-225 and DTV-235 series.

Jitter less than 130psec peak-peak at 270 Mbps.

Compact box for standalone or rack mounting

Rack-mount up to 6 units in 1 RU with optional -RM6 kit.

Fan out and reclocking modules available.

Coarse Wave-division Multiplexing (CWDM) systems are available for up to 16 wavelengths over ONE optical fiber.

Wall-mount power supply included.

DTV-120-FTX

Serial Digital Video Multimode Fiber Optic Transmitter and DA

One coaxial input, one Fiber Optic output.

Economical solution for the transport of digital signals up to 360 Mbps over Multimode fiber optic cables.
Up to a 10 dBm optical budget at a wavelength of 1310nm.
Supports SMPTE 259M Serial Digital Interfaces (SDI), 4:2:2 Component.

Specifications:
Input: Type: 1 BNC.
Impedance: 75 Ohms.
Return Loss: >18dB up to 270MHz.
Fiber Output: Type: ST.
Wavelength: 1330 Multimode,
Power: -14 dBm typical.

DTV-120-FRX

Serial Digital Video Multimode Fiber Optic Receiver and DA

One Fiber Optic input and two coaxial outputs.

Used with the DTV-120-FTX.

Specifications:
Fiber Input: Type: ST or FC.
Wavelength: 1100 to 1600nm.
Sensitivity: -24 dBm typical.
Output: Type: 2 BNC.
Return loss: >18dB up to 270MHz.

DTV-130-FTX

Serial Digital Video Singlemode Fiber Optic Transmitter and DA

One coaxial input, one Fiber Optic output.

Economical solution for the transport of digital signals from 143 to 400 Mbps up to 100KM over Singlemode fiber optic cables Available in 1310nm and 1550nm wavelengths.

Laser failure and data present LED indicators with open collector alarm output.
Supports SMPTE 259M Serial Digital Interfaces (SDI), 4:2:2 Component, Sonet/SDH and ATM.

Specifications:
Input: Type: 1 BNC.
Impedance: 75 Ohms.
Return Loss: >18dB up to 270MHz.
Fiber Output: Type: ST or FC.
Wavelength: 1310 or 1550nm Singlemode.
Power: -8 to 0 dBm or CWDM Laser.

DTV-130-FRX

Serial Digital Video Fiber Optic Receiver and DA

One Fiber Optic input and two coaxial outputs.

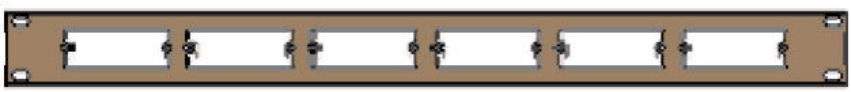
Optical signal and data presence LED indicators with open collector alarm output.
Used with the DTV-120-FTX.

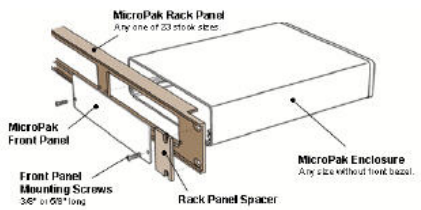
Specifications:
Fiber Input: Type: ST or FC.
Wavelength: 1100 to 1600nm.
Sensitivity: -28 dBm.
Output: Type: 2 BNC.
Return loss: >18dB up to 270MHz.

ORDERING INFORMATION

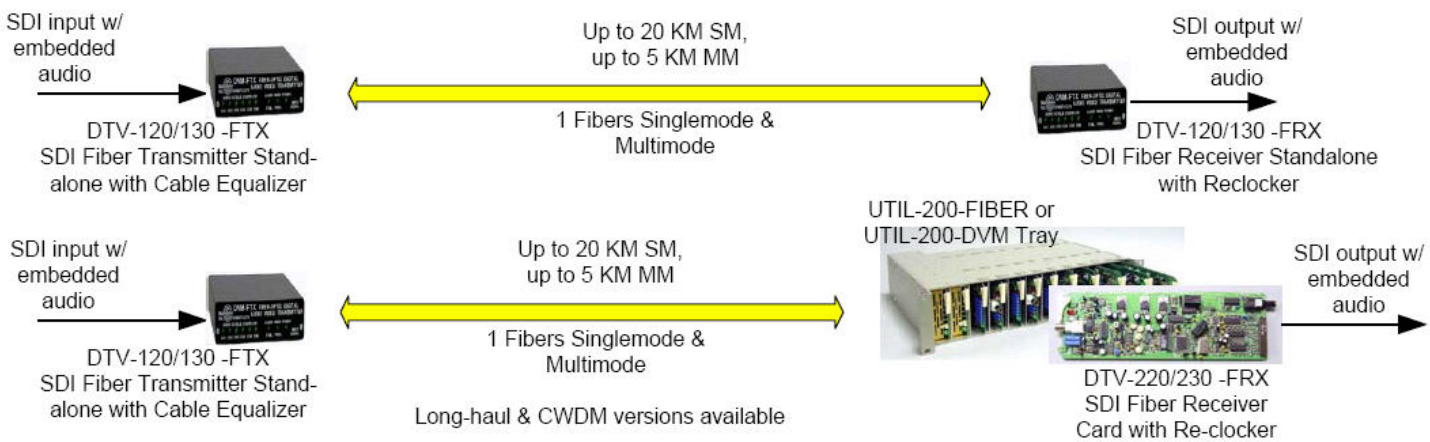
	Fiber Optics, 270 Mbps Serial Digital Transport for DTV, Stand Alone, Multimode: (SIN 58-6)
DTV-120-FTX-ST	270 Mbps Serial Digital Video Fiber Optic Transmitter, 1310nm, -14dBm, Multi-mode LED with ST connector, Stand-alone & Rack-mountable, wall-mount power supply included. Supports SMPTE 259M. (May require -RM6 & -BLANK)
DTV-120-FRX-ST	270 Mbps Serial Digital Video Fiber Optic Receiver, –24dBm sensitivity, Multi-mode with ST connector, Stand-alone & Rack-mountable, wall-mount power supply included. Supports SMPTE 259M.(May require -RM6 & -BLANK)
	Fiber Optics, 400 Mbps Serial Digital Transport for DTV, Stand Alone, Singlemode:
DTV-130-FTX-50-FC	400 Mbps Serial Digital Video Fiber Optic Transmitter, 1300nm Single-mode Laser -8 dBm with FC connector, Stand-alone & Rack-mountable, wall-mount power supply included. Supports SMPTE 259M. (-ST, -FC or –SC for connector type)(May require -RM6 & -BLANK)
DTV-130-FTX-52-FC	400 Mbps Serial Digital Video Fiber Optic Transmitter, 1300nm Single-mode Laser -3 dBm with FC connector, Stand-alone & Rack-mountable, wall-mount power supply included.(May require -RM6 & -BLANK)
DTV-130-FTX-53-FC	400 Mbps Serial Digital Video Fiber Optic Transmitter, 1300nm Single-mode Laser 0 dBm with FC connector, Stand-alone & Rack-mountable, wall-mount power supply included.(May require -RM6 & -BLANK)
DTV-130-FTX-6-FC	400 Mbps Serial Digital Video Fiber Optic Transmitter, 1550nm Single-mode Laser 0 dBm with FC connector, Stand-alone & Rack-mountable, wall-mount power supply included.(May require -RM6 & -BLANK)
DTV-130-FTX-7-SC-XXXX	400 Mbps Serial Digital Video Fiber Optic Transmitter with CWDM 1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm Single-mode Laser 0 dBm with SC connector. Supports up to 8 wavelengths or channels per fiber optic cable. (Enter wavelength for xxxx) (May requires CWDM Mux & Demux Accessories)(May require -RM6 & -BLANK)
DTV-130-FRX-FC	400 Mbps Serial Digital Video Fiber Optic Receiver, 1100 to 1600nm, –25dBm sensitivity, Single-mode with FC connector, Stand-alone & Rack-mountable, wall-mount power supply included. Supports SMPTE 259M. (-ST, -FC or –SC for connector type) (May require -RM6 & -BLANK)
	Synchronization, Re-clocking and Fan-out DAs, Stand Alone (SIN 58-6)
DTV-110	400 Mbps Automatic Standard Reclocking DA and Repeater w/ cable EQ , Stand-alone & Rack-mountable, wall-mount power supply included. (May require -RM6 & -BLANK)
	Rack-mount Kits and Accessories (SIN 58-6)
-RM6	6 unit rack-mounting kit, mount 6 DTV-100/1500 in 1 rack unit
-BLANK	Blank panel for rack-mounting kit

Rack-Mount Kits –RM6

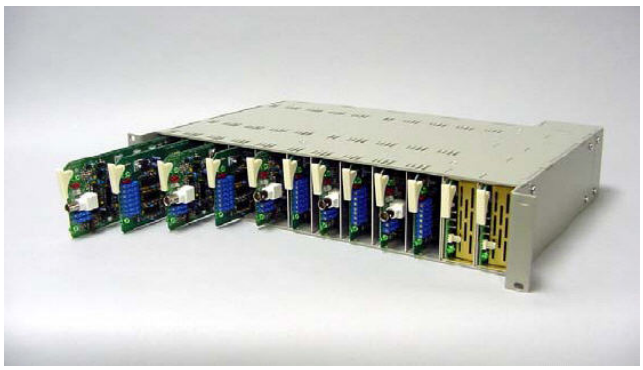




Application Diagram for DTV120/130/220/230 SDI Fiber Optic Transport System


SDI input w/ embedded audio
DTV-120/130 -FTX
SDI Fiber Transmitter Stand-alone with Cable Equalizer
Up to 20 KM SM, up to 5 KM MM
1 Fibers Singlemode & Multimode
SDI output w/ embedded audio
DTV-120/130 -FRX
SDI Fiber Receiver Standalone with Reclocker
SDI input w/ embedded audio
DTV-120/130 -FTX
SDI Fiber Transmitter Stand-alone with Cable Equalizer
Up to 20 KM SM, up to 5 KM MM
1 Fibers Singlemode & Multimode
Long-haul & CWDM versions available
UTIL-200-FIBER or UTIL-200-DVM Tray
DTV-220/230 -FRX
SDI Fiber Receiver Card with Re-clocker
SDI output w/ embedded audio

Serial Digital Video DAs, Equalizers & Reclockers



SUMMARY

Designed to ease the engineering and financial difficulties associated with the migration to DTV.

An economical solution for the coaxial distribution of virtually any digital signal from 40 to 400 Mbps.

Supported standards include SMPTE 259M Serial Digital Interfaces (SDI), 4:2:2 Component and Wide Screen, , Sonet/SDH and ATM.

Optionally supported standards of SMPTE 305M (SDTi) SMPTE310M (19.4Mb/s), SMPTE 344M (540Mb/s) and M2S (please call)

Supports embedded audio and data. Audio and data must be embedded externally.

Mix and match analog and digital distribution and fiber optic transport in the same tray.
Cards are available for the UTIL-200, UTIL-200-DVM and UTIL-200-FIBER Utility Trays.

The standard power supply PS-200-AC has a universal input voltage range from 85 to 265 VAC.
No need to set voltage selector switches; simply plug in and forget.
The 48 VDC power supply PS-200- 48VDC has an input voltage range from 36 to 60 VDC.
Ideal for Telephone Company central office applications.

Two redundant power supplies with external alarm relay contacts and front panel LED indicators for each power supply are included.

DTV-201

Serial Digital Video Fanout DA 1x4

Economical solution for the distribution of digital signals from 10 to 400Mbps when reclocking is not required.
Automatic equalization for up to 300 meters of belden 8281.

Provides 1 coaxial input, 4 coaxial outputs and supports SMPTE 259M, Sonet/SDH and ATM.

Designed for the UTIL-200-FIBER and UTIL-200-DVM Serial Digital Video Distribution and Fiber Optic Transport Trays.

SPECIFICATIONS

Input
Type: 1 BNC.
Impedance: 75 Ohms.
Return Loss: >18dB up to 270MHz.
Output
Type: 4 BNC.
Return Loss: >18dB up to 270MHz.

ORDERING INFORMATION

DTV-201 Serial Digital Video Fanout DA 1x4 for the UTIL-200-FIBER and UTIL-200-DVM Trays.

DTV-202

Serial Digital Video Fanout DA 1x8

Economical solution for the distribution of digital signals from 10 to 400Mbps when reclocking is not required.
Automatic equalization for up to 300 meters of belden 8281.

Provides 1 coaxial input, 8 coaxial outputs and supports SMPTE 259M, Sonet/SDH and ATM.
Designed for the UTIL-200 Serial Digital Video Distribution and Analog DA Tray.

SPECIFICATIONS

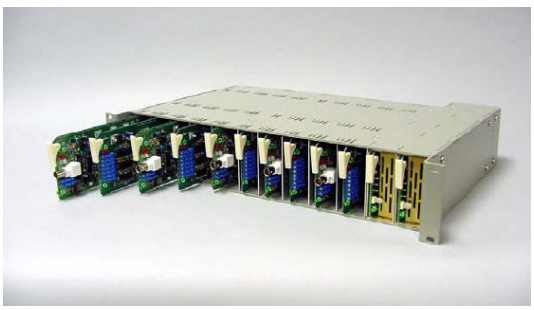
Input:
Type: 1 BNC.
Impedance: 75 Ohms.
Return Loss: >18dB up to 270MHz.
Output:
Type: 8 BNC.
Return Loss: >18dB up to 270MHz.

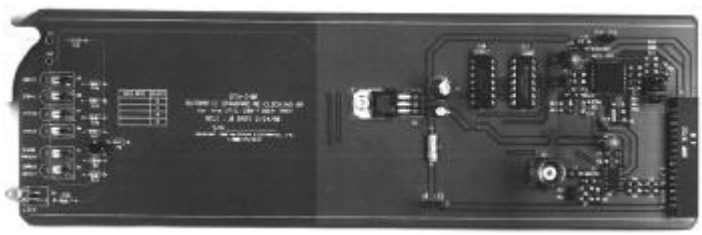
ORDERING INFORMATION

DTV-202 Serial Digital Video Fanout DA 1x8 for the UTIL-200 Tray.

DTV-210

Automatic Standard Reclocking DA





For applications that require reclocking and low jitter.

Automatic reclocking of digital signals from 40 to 400Mbps.
Automatic equalization for up to 300 meters of belden 8281.

Automatic selection of 143, 177, 270 and 360 Mbps.
LEDs indicate data rate.
Custom data rates are available.
Jitter less than 130psec peak-peak at 270 Mbps.
Carrier detect and signal present LED indicators.
Provides 1 coaxial input and up to 8 coaxial outputs.

SPECIFICATIONS

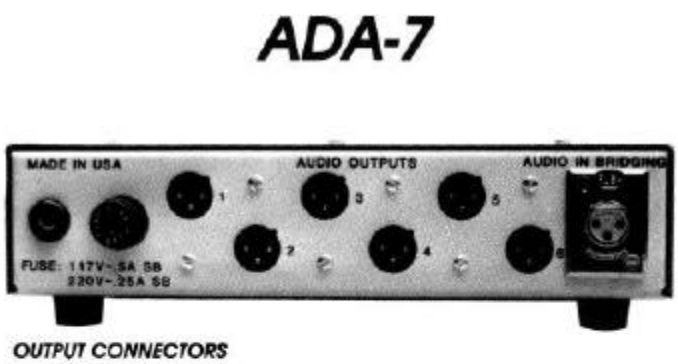
Input
Type: 1 BNC.
Impedance: 75 Ohms.
Return Loss: >18dB up to 270MHz.

Output
Type: up to 8 BNC.
Return Loss: >18dB up to 270MHz.
Data rate selection: Automatic or Manual.

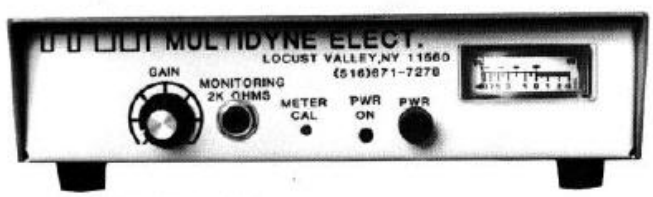
ORDERING INFORMATION

DTV-210 Automatic Standard Reclocking DA, 1 by 8, for the UTIL-200 Serial Digital Video and Analog DA Tray.
DTV-210F Automatic Standard Reclocking DA, 1 by 4, for the UTIL-200-FIBER and UTIL-200-DVM Serial Digital Video & Fiber Optic Transport Tray.

Audio Distribution Amplifiers With Hum Bucking & Isolation Transformers



OUTPUT CONNECTORS



MODEL ADA-7 PORTABLE

MODEL ADA-7 DUAL RACK MOUNTED

Specifications

Input impedence ……10K balanced transformer coupled
Output Level ……..+24dBm in 600 ohm
Number of Outputs ……6 transformer coupled plus phone jack
Output impedence ……600/150 ohm
Frequency Response …….. +/- 25dB 40Hz to 20kHz
Common Mode Rejection ……85dB of 60Hz
Harmonic Distortion …….0.05% typical
Noise …….. -70dB typical
Dimensions Portable …….. 9”W x 9.75”D x 2.5”H
Dimensions Dual Rack Mounted ……19”W x 9.5”D x 1.75”W
Power Each Unit ……..... 10W max, 117volt +/-20%, 40/60Hz
Weight Protable ……7.25 pounds
Weight Dual Rack Mounted …….. 15 pounds

Features

Six outputs Transformer coupled
Bridging transformer coupled input
XLR input and output connectors
Regulated power supply
Low noise and low distoration
Front panel meter
Popless monitoring Jack

SUMMARY

- High impedance, balanced, transformer coupled, bridging input.
- Six transformer isolated, balanced outputs.
- Ideal for the cancellation of audio hum, buzz and ground loops.
- XLR audio connectors.
- Front panel VU meter, Gain adjustment and popless headset monitoring jack.
- Low noise.
- Regulated power supply with selector switch for 110 and 220 AC operation.

ORDERING INFORMATION

ADA-7 for Portable unit
ADA-7 DRM for Dual Rack Mounted Unit

Audio Automatic Gain Stereo Distribution Amplifier with VU Meters

SUMMARY

The NEW AAGC-200 Modular Stereo Audio Automatic Gain Distribution Amplifiers is ideal for applications where consistent audio levels are required to prevent clipping and distortion.
The gain is adjustable from -6 to +30 dBm.
The hold time is adjustable from 1 to 12 seconds.
The unit includes low level gating to prevent amplification of noise during quite periods.
The DA is available with front panel Bi-color VU LEDs or a high accuracy 10 Segment LED VU Meters.
The AAGC-200 and the entire ADA-200 Series of Modular Audio Distribution Amplifiers plug into the NEW MULTIDYNE UTIL-200-AUDIO 10 Slot Audio DA Tray and the UTIL-200-AV 5 Slot Video and 5 Slot Audio DA Tray.
The trays are available with universal redundant power supplies for 85 to 265 VAC and 48 VDC operation.

SPECIFICATIONS

INPUT

Impedance: 50K Ohms, balanced
Max. Level:+30 dBu
Common mode range: +/- 20 Volts
Common mode rejection: >90 dB @ 60 Hz

OUTPUT

Channel: 1 Mono, 2 Stereo
Output per channel: 8 Mono, 4 Stereo
Impedance:100/600 Ohms standard/optional
Max. level: +30 dBu
Output to output isolation: > 70 dB

PERFORMANCE

Gain range: -6 to +33 dB
(+/- 15 dB on multi-turn pot, 0, 6, 10, 18 fixed)
Signal to noise: >100 dB
Frequency response: <+/- 0.05dB, 20 – 20 KHz
Total harmonic distortion: <0.02%
Intermodulation distortion: <0.01%
Isolation between cards: >100 dB
Interchannel crosstalk: >95 dB
Temperature range: 0 – 50 degrees C
Power consumption, MAX.: < 2 Watts

ORDERING INFORMATION

ADAM-200
50 or 600 Ohm Mono Audio Distribution Amplifier
1 in 8 out
Gain –6 to +33 dB
S/N 100 dB
50 Ohm standard output impedance

ADAS-200
50 or 600 Ohm Stereo Audio Distribution Amplifier
1 in 4 out stereo
Gain –6 to +33 dB
S/N 100 dB
50 Ohm standard output impedance

AAGC-200
50 or 600 Ohm Mono and Stereo Audio Distribution Amplifier and Automatic Gain Control with Low-level gating
1 in 8 out mono
2 in 4 out stereo
Gain –6 to +33 dB
S/N 100 dB
50 Ohm standard output impedance

-VUA, Bi-colored LED VU Audio Indicator, optional (per channel)
-VUBAR, 10 Segment LED VU Meter, optional (stereo only)

UTIL-200-AUDIO-2RU-AC
Analog Audio 10 Slot 2RU Modular Audio Utility Tray
with one 85-265 VAC Power Supply & Line Cord

UTIL-200-AV-2RU-AC
Analog & Digital Video Analog & Digital Audio 5 Slot Video & 5 Slot Audio 2RU, Modular Utility Tray
one 85-265 VAC Power Supply & Line cord

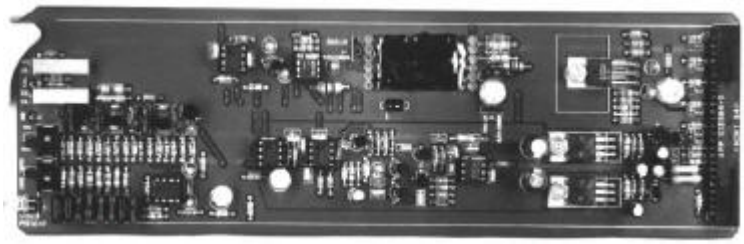
PS-200-AC
Modular 85-265 VAC Power Supply & Line Cord for 200 series trays

UTIL-200-AUDIO-2RU-48VDC
Analog Audio 10Slot, 2RU, Modular Utility Tray,
with one 35-60 VDC Power Supply

UTIL-200-AV-2RU-48VDC
Analog & Digital Video Analog & Digital Audio 5 Slot Video & 5 Slot Audio, 2RU Modular Utility Tray,
with one 35-60 VDC Power Supply

PS-200-48VDC
Modular 35-60 VDC Power Supply for 200 series trays

Video Automatic Gain, EQ and Chroma Distribution Amplifier



SUMMARY

- Automatic video Gain adjustment to 1 Volt peak to peak with 100 IRE maximum luminance peak.
- Automatic flatness Equalization for more than 4000 feet of Belden 8281 and more than 3000 feet of Belden
- RG59U to within +/- 0.05dB at 3.58MHz.
- Supports two switch selectable cable types (Belden 8281 and RG59U typical).
- Automatic chrominance adjustment +/- 9 dB to broadcast specifications. (VAGC-200 only)
- High impedance loop-through input and up to 8 outputs with source terminations of 75 Ohms.
- Equalizers for other cable types are available.
- Back-porch clamp with up to 60 Vp-p hum cancellation.
- Video present LED indicator.
- The unit automatically compensates for signal degradation for Satellite, Cable TV Head-ends, ENG, Off-air Signals and roll-off due to coaxial cable.

VAGC-100 Portable Stand-alone Model

Model VAGC-200 Modular Plug-in

- Plugs into the MULTIDYNE UTIL-200-2RU-AC, 10 module, 8 output tray with 2 redundant power supplies.
- 85 - 265 VAC Auto-ranging Power Supply and 48 VDC Power Supply available for all trays.
- Fully compatible with the Grass Valley™ 8500/8800/8900 Trays.

Model VAGC-100 Portable Stand-alone or Rack-mount

- Stand-alone with L x Wx H, 5 ½" by 5 ½" by 1 ¾" or triple rack-mount in 1 ¾" by 19" rack space with 5 ½" depth. • Operates from 110 and 220 VAC (optional front panel switch) and from a 12V Battery or external 12 VDC.

SPECIFICATIONS

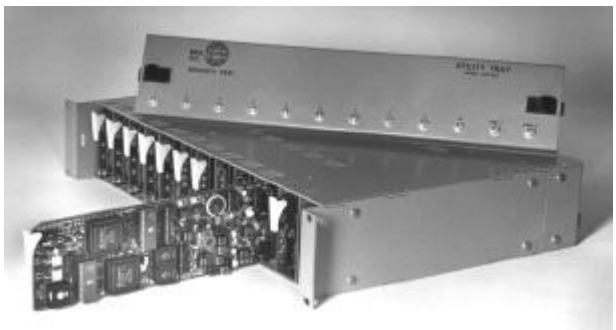
Input video level range	0.35 to 2 Volts
Gain accuracy automatic	+/-0.05 dB
Chrominance burst amplitude accuracy	+/-0.05 dB
Clamp type	Back-porch, sampling, feedback
Equalization Max. Range 8281 type cable	> 4000 ft automatic
Equalization Max. Range RG-59U type cable	> 3000 ft automatic
Chrominance adjustment range	> +/- 9 dB
Differential Gain	< 0.2 %
Differential Phase	< 0.2 º
Line or Field Tilt	< 0.5 %
Signal to Noise	> 72 dB
Common Mode Rejection (60 Hz)	> 66 dB
Return Loss, to 5 MHz	> 42 dB
Power consumption, MAX.	< 2 Watts

ORDERING INFORMATION

VAGC-200, Modular Plug-in Video Automatic Gain, EQ and Chroma Distribution Amplifier for the UTIL-200 Tray.
VAGC-100, Stand-alone Video Automatic Gain and EQ Distribution Amplifier.

Options: **-RMT**, Triple Rack-mount Kit for the VAGC-100;
-110/220SW, 110 and 220 VAC Front Panel Selector Switch.

Equalizing, Video, Pulse Distribution Amplifier with Back-porch Clamp



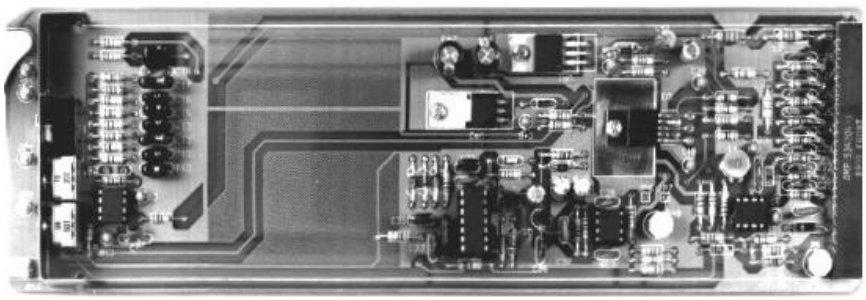
SUMMARY

- Over **20 MHz Band-Width** for the distribution of video, pulses and subcarrier for NTSC, PAL and SECAM as well as AES/EBU digital audio.
- High impedance loop-through input and **8 outputs** with source terminations of 75 Ohms.
- **124 Ohm balanced input option, -BALIN.** Plugs into the UTIL-200-BALIN-2RU-AC Tray.
- **Equalizer** for up to **1000 feet** of 124 Ohm cable.
- **Back-porch clamp** with **60 V hum cancellation**.
- Video present LED indicator.
- Plugs into the MULTIDYNE UTIL-200-BALIN-2RU-AC, 10 module, 8 output tray with 2 redundant power supplies and the MULTIDYNE UTIL-200-BALIN-2RU-48VDC, 10 module, 8 output tray with 2 redundant power supplies.
- 90-250 VAC Auto-ranging Power Supply and 48 VDC Power Supply available for all trays.
- Exceptionally versatile for NTSC, PAL, SECAM and composite or component television systems.

SPECIFICATIONS

Bandwidth, 3 dB	22 MHz
Frequency response	
10 Hz to 5 MHz	+/-0.025 dB
5 MHz to 8 MHz	+/0.05 dB
8 MHz to 10 MHz	+/-0.2 dB
18 MHz	-1 dB
Clamp type	Back-porch, sampling, feedback
Equalization Range 8281 type cable	0 - 1000 Ft with single control
Equalization Range RG-59U type cable	0 - 1000 Ft with single control
Equalization Accuracy	
10 Hz to 5 MHz	+/ 0.05 dB
5 MHz to 8 MHz	+/- 0.10 dB
8 MHz to 10 MHz	+- 0.20 dB
Differential Gain	<0.1 %
Differential Phase	<0.1 º
Line or Field Tilt	<0.5 %
Signal to Noise	> 80 dB
Common Mode Rejection (60 Hz)	> 66 dB
Return Loss, to 5 MHz	>42 dB
Power consumption, MAX.	2 Watts

Equalizing, Video, Pulse Distribution Amplifier with Back-porch Clamp



SUMMARY

- Over 20 MHz Band-Width for the distribution of video, pulses and subcarrier for NTSC, PAL and SECAM as well as AES/EBU digital audio.
- High impedance loop-through input and 8 outputs with source terminations of 75 Ohms.
- Equalizer for up to 1500 ft (450 meters) with switch selector for both 8281 and RG-59U type cable.
- Variations for other cable types are available.
- Back-porch clamp with 60 V hum cancellation.
- Video present LED indicator.
- Plugs into the MULTIDYNE VDA-200-2RU, 10 module, 8 output tray with 2 redundant power supplies and the MULTIDYNE VDA-200-1RU, 4 module, 8 output tray.
- 90-250 VAC Auto-ranging Power Supply and 48 VDC Power Supply available for all trays.
- Fully compatible with the Grass ValleyTM 8500/8800 and the MULTIDYNE UTIL-200 Video DA Trays.
- Exceptionally versatile for NTSC, PAL, SECAM and composite or component television systems.

SPECIFICATIONS

Bandwidth, 3 dB	22 MHz
Frequency response	
10 Hz to 5 MHz	+/-0.025 dB
5 MHz to 8 MHz	+/0.05 dB
8 MHz to 10 MHz	+/-0.2 dB
18 MHz	-1 dB
Clamp type	Back-porch, sampling, feedback
Equalization Range 8281 type cable	0 - 1000 Ft with single control
Equalization Range RG-59U type cable	0 - 1000 Ft with single control
Equalization Accuracy	
10 Hz to 5 MHz	+/ 0.05 dB
5 MHz to 8 MHz	+/- 0.10 dB
8 MHz to 10 MHz	+- 0.20 dB
Differential Gain	<0.1 %
Differential Phase	<0.1 º
Line or Field Tilt	<0.5 %
Signal to Noise	> 80 dB
Common Mode Rejection (60 Hz)	> 66 dB
Return Loss, to 5 MHz	>42 dB
Power consumption, MAX.	2 Watts

VDA-201

20MHz, Utility DA for Video, Pulse, Subcarrier and AES/EBU Digital Audio, 1x8, Modular Card

The VDA-201 is an economical high performance distribution amplifier ideal for applications where clamping and cable equalization are not required.
The DA will cancel up to 60 Volts of common-mode hum.
The unit includes a differential loop-through input and eight outputs with a front panel video presence LED.
The DA is ideal for short cable runs to monitors and for the distribution of color black burst reference signals.
The full line VDA-200 Distribution Amplifiers support the 75 Ohm coaxial distribution of AES/EBU digital audio signals.
The modular design is compatible with the MULTIDYNE UTIL-200 and the Grass 8500/8800/8900 trays.

Specifications

Input
Type: 2 BNC Loop-through.
Impedance: 75 Ohms.
Return Loss: > 40 dB up to 5 MHz.

Output
Type: 8 BNC.
Impedance: 75 Ohms.
Return Loss: > 35 dB up to 5 MHz

Performance
Bandwidth, 3 dB: 22 MHz.
Frequency Response,
10 Hz to 5 MHz: +/-0.025 dB;
5 MHz to 8 MHz: +/-0.05 dB;
8 MHz to 10 MHz: +/-0.2 dB;
18 MHz: -1dB.
Differential Gain: <0.1 %;
Differential Phase: <0.1¡Æ.
Line or Field Tilt: <0.5 %.
Signal to Noise: > 80 dB.
Common Mode Rejection (60 Hz): >66 dB.
Return Loss, to 5 MHz: >42 dB.
Power Consumption, MAX: 2 Watts

VDA-202

20 MHz, Utility DA for Video, Pulse, Subcarrier and AES/EBU Digital Audio with Back-porch Clamp, 1x8, Modular Card

The VDA-202 is an economical high performance distribution amplifier ideal for applications where clamping is required and cable equalization is not required.
The DA is ideal for long cable runs to monitors, for the distribution of color black burst reference signals and for studio to studio distribution of video signals where ground differences or DC off-sets may exist.
The clamp circuit in the FAST mode will remove differential mode hum from the video signal on a line by line basis.
The DA will cancel up to 60 Volts of common-mode hum.
The unit includes a differential loop-through input and eight outputs with a front panel video presence LED.
The full line VDA-200 Distribution Amplifiers support the 75 Ohm coaxial distribution of AES/EBU digital audio signals.
The modular design is compatible with the MULTIDYNE UTIL-200 and the Grass 8500/8800/8900 trays.

Specifications

Input
Type: 2 BNC Loop-through.
Impedance: 75 Ohms.
Return Loss: > 40 dB up to 5 MHz.

Output
Type: 8 BNC.
Impedance: 75 Ohms.
Return Loss: > 35 dB up to 5 MHz

Performance
Bandwidth, 3 dB: 22 MHz.
Frequency Response,
10 Hz to 5 MHz: +/-0.025 dB;
5 MHz to 8 MHz: +/-0.05 dB;
8 MHz to 10 MHz: +/-0.2 dB;
18 MHz: -1dB.
Clamp type: Back-porch, sampling,feedback.
Differential Gain: < 0.1 %
Differential Phase: < 0.1¡Æ
Line or Field Tilt: < 0.5 %
Signal to Noise: > 80 dB
Common Mode Rejection (60 Hz): >66 dB.
Return Loss, to 5 MHz: >42 dB.
Power Consumption, MAX: 2 Watts

VDA-210

20 MHz, Utility DA for Video, Pulse, Subcarrier and AES/EBU Digital Audio with 1500 Ft. Equalizer & Back Porch Clamp, 1x8, Modular Card

The VDA-210 is an economical high performance distribution amplifier ideal for applications where clamping and cable equalization are required.
The DA is ideal for very long cable runs of up to 1500 feet to monitors, for the distribution of color black burst reference signals and for studio to studio distribution of video signals where ground differences or DC off-sets may exist.
The clamp circuit in the FAST mode will remove differential mode hum from the video signal on a line by line basis.
The DA will cancel up to 60 Volts of common-mode hum.
The equalization feature compensates for up to 1500 feet of cable losses for one type of cable.
Please specify the cable type to be used.
The unit includes a differential loop-through input and eight outputs with a front panel video presence LED.
A 124-Ohm balanced input option, -BALIN, is available.
The VDA-210-BALIN plugs into the UTIL-200-BALIN-2RU-AC.
The full line VDA-200 Distribution Amplifiers support the 75 Ohm coaxial distribution of AES/EBU digital audio signals.
The modular design is compatible with the MULTIDYNE UTIL-200 and the Grass 8500/8800/8900 trays.

Specifications:

Input
Type: 2 BNC Loop-through.
Impedance: 75 Ohms.
Return Loss: > 40 dB up to 5 MHz.

Output
Type: 8 BNC.
Impedance: 75 Ohms.
Return Loss: > 35 dB up to 5 MHz

Performance
Bandwidth, 3 dB: 22 MHz.
Frequency Response,
10 Hz to 5 MHz: +/-0.025 dB
5 MHz to 8 MHz: +/-0.05 dB
8 MHz to 10 MHz: +/-0.2 dB
18 MHz: -1 dB.
Clamp type: Back-porch, sampling, feedback.
Equalization Range:
8281 type cable 0 - 1500 Ft with single control
RG-59U type cable 0 - 1000 Ft with single control.
Equalization Accuracy:
10 Hz to 5 MHz: +/- 0.05 dB
5 MHz to 8 MHz: +/- 0.10 dB
8 MHz to 10 MHz: +/- 0.20 dB
Differential Gain: <0.1 %
Differential Phase: <0.1°
Line or Field Tilt: <0.5 %
Signal to Noise: > 80 dB
Common Mode Rejection (60 Hz): >66 dB
Return Loss, to 5 MHz: >42 dB.
Power Consumption, MAX: 2 Watts

VDA-220

20 MHz, Field DA for Video, Pulse, Subcarrier and AES/EBU Digital Audio with 1500 Ft. Equalizer for 8281 & RG-59U cable & Back Porch Clamp, 1x8, Modular Card

The VDA-220 is an economical high performance distribution amplifier ideal for applications where clamping and cable equalization are required.
The DA is ideal for very long cable runs of up to 1500 feet to monitors, for the distribution of color black burst reference signals and for studio to studio distribution of video signals where ground differences or DC off-sets may exist.
The clamp circuit in the FAST mode will remove differential mode hum from the video signal on a line by line basis.
The DA will cancel up to 60 Volts of common-mode hum. The units is also ideal for field, remote, sporting and ENG field applications where multiple cable types may be in use.
The equalization feature compensates for up to 1500 feet of cable losses for two type of cable.
The user can switch select cable equalizers for either 8281 and RG-59U or any two types of cable. Please specify the cable type to be used.
The unit includes a differential loop-through input and eight outputs with a front panel video presence LED.
The full line VDA-200 Distribution Amplifiers support the 75 Ohm coaxial distribution of AES/EBU digital audio signals.
The modular design is compatible with the MULTIDYNE UTIL-200 and the Grass 8500/8800/8900 trays.

Specifications

Input
Type: 2 BNC Loop-through
Impedance: 75 Ohms
Return Loss: > 40 dB up to 5 MHz

Output
Type: 8 BNC
Impedance: 75 Ohms
Return Loss: > 40 dB up to 5 MHz

Performance
Bandwidth, 3 dB: 22 MHz.
Frequency Response
10 Hz to 5 MHz: +/-0.025 dB
5 MHz to 8 MHz: +/-0.05 dB
8 MHz to 10 MHz: +/-0.2 dB
18 MHz: -1 dB.
Clamp type: Back-porch, sampling, feedback.
Equalization Range:
8281 type cable 0 - 1500 Ft with single control;
RG- 59U type cable 0 - 1000 Ft with single control.
Equalization Accuracy:
10 Hz to 5 MHz: +/- 0.05 dB
5 MHz to 8 MHz: +/- 0.10 dB
8 MHz to 10 MHz: +/- 0.20 dB.
Differential Gain: <0.1 %
Differential Phase: <0.1°.
Line or Field Tilt: <0.5 %.
Signal to Noise: > 80 dB.
Common Mode Rejection (60 Hz): >66 dB. Return Loss, to 5 MHz: >42 dB.
Power Consumption, MAX: 2 Watts

VDA-8505

20 MHz, Long Range Field DA for Video, Pulse, Subcarrier and AES/EBU Digital Audio with 3500 Ft. Equalizer for 8281 & RG-59U cable & Back Porch Clamp, 1x8, Modular Card

The VDA-8505 is an economical high performance distribution amplifier ideal for applications where clamping and long range cable equalization are required.
The DA is ideal for long range cable runs of up to 3500 feet to monitors, for the distribution of color black burst reference signals and for studio to studio distribution of video signals where ground differences or DC off-sets may exist.
The clamp circuit in the FAST mode will remove differential mode hum from the video signal on a line by line basis. The DA will cancel up to 60 Volts of common- mode hum. For severe hum problems, the VDA-8505 is optionally available with an Isolation Transformer; option -TRANS. The rack-mounting kit for 5 transformers is option -RMTRANS.
The units is also ideal for field, remote, sporting and ENG field applications where multiple cable types may be in use. The equalization feature compensates for up to 3500 feet of cable losses for two type of cable.
The user can switch select cable equalizers for either 8281 and RG-59U or any two types of cable.
The equalizer has switch selectable 1000 foot and 2000 foot fixed equalization stages and a 1000 foot adjustable stage for fine adjustments.
Please specify the cable type to be used.
The unit includes a differential loop-through input and eight outputs with a front panel video presence LED.
The full line VDA-200 Distribution Amplifiers support the 75 Ohm coaxial distribution of AES/EBU digital audio signals. The modular design is compatible with the MULTIDYNE UTIL-200 and the Grass 8500/8800/8900 trays.

Specifications

Input
Type: 2 BNC Loop-through.
Impedance: 75 Ohms.
Return Loss: > 40 dB up to 5 MHz.

Output:
Type: 8 BNC
Impedance: 75 Ohms
Return Loss: > 40 dB up to 5 MHz

Performance:
Bandwidth, 3 dB: 22 MHz
Frequency Response
10 Hz to 5 MHz: +/-0.025 dB
5 MHz to 8 MHz: +/-0.05 dB
8 MHz to 10 MHz: +/-0.2 dB
18 MHz: -1 dB
Clamp type: Back-porch, sampling, feedback
Equalization Range:
8281 type cable 0 - 3500 Ft with single control;
RG- 59U type cable 0 - 3000 Ft with single control.
Equalization Accuracy:
10 Hz to 5 MHz: +/- 0.05 dB
5 MHz to 8 MHz: +/- 0.10 dB
8 MHz to 10 MHz: +/- 0.20 dB
Differential Gain: <0.1 %
Differential Phase: <0.1°
Line or Field Tilt: <0.5 %
Signal to Noise: > 80 dB
Common Mode Rejection (60 Hz): >66 dB
Return Loss, to 5 MHz: >42 dB
Power Consumption, MAX: 2 Watts

VAGC-200

VAGC-200, Video Automatic Gain, 3000 ft Equalizer & Chroma Distribution Amplifier & Automatic Proc-amp, 1x8, Modular Card

The VDA-8505 is an economical high performance distribution amplifier ideal for applications where clamping and long range cable equalization are required. The DA is ideal for long range cable runs of up to 3500 feet to monitors, for the distribution of color black burst reference signals and for studio to studio distribution of video signals where ground differences or DC off-sets may exist.
The clamp circuit in the FAST mode will remove differential mode hum from the video signal on a line by line basis. The DA will cancel up to 40 Volts of common- mode hum.
The units is also ideal for field, remote, sporting and ENG field applications where multiple cable types may be in use.
The equalization feature compensates for up to 3500 feet of cable losses for two type of cable.
The user can switch select cable equalizers for either 8281 and RG-59U or any two types of cable.
The equalizer has switch selectable 1000 foot and 2000 foot fixed equalization stages and a 1000 foot adjustable stage for fine adjustments.
Please specify the cable type to be used.
The unit includes a differential loop-through input and eight outputs with a front panel video presence LED.
The full line VDA-200 Distribution Amplifiers support the 75 Ohm coaxial distribution of AES/EBU digital audio signals.
The modular design is compatible with the MULTIDYNE UTIL-200 and the Grass 8500/8800/8900 trays.

Specifications

Input

Type: 2 BNC Loop-through.
Impedance: 75 Ohms.
Return Loss: > 40 dB up to 5 MHz.

Output

Type: 8 BNC.
Impedance: 75 Ohms.
Return Loss: > 40 dB up to 5 MHz

Performance

Bandwidth, 3 dB: 22 MHz.
Frequency Response,
10 Hz to 5 MHz: +/-0.025 dB;
5 MHz to 8 MHz: +/-0.05 dB;
8 MHz to 10 MHz: +/-0.2 dB;
18 MHz: -1 dB.
Input Video Level Range: 0.2 to 2 Volts.
Gain Accuracy: +/- 0.05 dB.
Chrominance Burst Amplitude Accuracy:
+/- 0.05 dB.
Clamp type: Back-porch, sampling, feedback.
Equalization Range:
8281 type cable 0 - 3500 Ft with single control
RG-59U type cable 0 - 3000 Ft with single control.
Equalization Accuracy:
10 Hz to 5 MHz: +/- 0.05 dB
5 MHz to 8 MHz: +/- 0.10 dB
8 MHz to 10 MHz: +/- 0.20 dB
Chrominance Adjustment Range: +/- 9 dB Differential Gain: <0.1 %
Differential Phase: <0.1°
Line or Field Tilt: <0.5 %
Signal to Noise: > 80 dB
Common Mode Rejection (60 Hz): >66 dB Return Loss, to 5 MHz: >42 dB. Power Consumption, MAX: 2 Watts

VDDA-200

Video Delay DA with 1500 Ft. Equalizer for 8281 & RG-59U cable & Back Porch Clamp, 1x8, Modular Card (Preliminary)

The VDDA-200 Video Delay DA supports adjustable delay from 0 to 600 nano-seconds with +/- 6 nano-second fine adjustment.
The unit is ideal for production and synchronization applications where precise timing of signals is required.
The equalization feature compensates for up to 1500 feet of cable losses for two type of cable.
The user can switch select cable equalizers for either 8281 and RG-59U or any two types of cable.
Please specify the cable type to be used.
The clamp circuit in the FAST mode will remove differential mode hum from the video signal on a line by line basis.
The DA will cancel up to 60 Volts of common-mode hum.
The unit includes a differential loop-through input and eight outputs with a front panel video presence LED.
Exceptionally versatile for NTSC, PAL, SECAM and composite or component television systems.
The modular design is compatible with the MULTIDYNE UTIL-200 and the Grass 8500/8800/8900 trays.

Specifications

Input

Type: 2 BNC Loop-through.
Impedance: 75 Ohms.
Return Loss: > 40 dB up to 5 MHz.

Output

Type: 8 BNC.
Impedance: 75 Ohms.
Return Loss: > 40 dB up to 5 MHz

Performance

Bandwidth, 3 dB: 22 MHz.
Frequency Response,
10 Hz to 5 MHz: +/-0.025 dB;
5 MHz to 8 MHz: +/-0.05 dB;
8 MHz to 10 MHz: +/-0.2 dB;
18 MHz: -1 dB.
Input Video Level Range: 0.2 to 2 Volts.
Gain Accuracy: +/- 0.05 dB.
Chrominance Burst Amplitude Accuracy: +/- 0.05 dB.
Clamp type: Back-porch, sampling, feedback.
Equalization Range:
8281 type cable 0 - 3500 Ft with single control
RG-59U type cable 0 - 3000 Ft with single control.
Equalization Accuracy:
10 Hz to 5 MHz: +/- 0.05 dB;
5 MHz to 8 MHz: +/- 0.10 dB,
8 MHz to 10 MHz: +/- 0.20 dB.
Chrominance Adjustment Range: +/- 9 dB. Differential Gain: <0.1 %;
Differential Phase: <0.1°.
Line or Field Tilt: <0.5 %.
Signal to Noise: > 80 dB.
Common Mode Rejection (60 Hz): >66 dB. Return Loss, to 5 MHz: >42 dB.
Power Consumption, MAX: 2 Watts

WVDA-250

200 MHz Wide Band Video & DS-3 Data DA with 500 Ft. Equalizer, Back Porch Clamp, 1x8, Modular Card

The 200 MHz Band-Width of the WVDA-250 DA is ideal for the distribution of Wide-Band Composite Video, IF Video and Audio Carriers and High Speed Data.
The unit can distribute signal over 50 Mega Bit/Sec Data including DS3 Telephone Compressed Digital Video.
The unit includes a differential loop-through input and eight outputs with a front panel video presence LED.
The DA features Post-Equalize 0-500 feet or Pre-Equalize 0-200 feet of 8281 type cable with exceptional accuracy and Back-porch clamp with hum cancellation.
The clamp circuit in the FAST mode will remove differential mode hum from the video signal on a line by line basis.
Applications include the distribution of IF Video and Audio Carriers, HDTV, Computer Graphics, DS3, DS1 and Digital Data.
The modular design is compatible with the MULTIDYNE UTIL-200 and the Grass 8500/8800/8900 trays.

Specifications:

Input
Type: 2 BNC Loop-through
Impedance: 75 Ohms
Return Loss: > 38 dB up to 5 MHz

Output
Type: 8 BNC
Impedance: 75 Ohms
Return Loss: > 38 dB up to 5 MHz

Performance
Conforms to the 44.736 Mb/s DS3 specifications
Bandwidth, 3 dB: 200 MHz
Frequency Response:
10 Hz to 5 MHz: +/-0.05 dB
5 MHz to 10 MHz: +/-0.1 dB
10 MHz to 40 MHz: +/-0.25 dB
40 MHz to 80 MHz: +/-0.5 dB
Post-Equalization Range: 0 - 500 Ft of 8281 cable.
Pre- Equalization Range: 0 - 200 Ft of 8281 cable.
Equalization Accuracy:
0.05 dB/dB of loss to 10 MHz;
0.1 dB/dB of loss 10 MHz to 40 MHz;
0.2 dB/dB of loss 40 MHz to 90 MHz.
Differential Gain: <0.2 %.
Differential Phase: <0.2°.
Line or Field Tilt: <0.5 %.
Signal to Noise: > 80 dB.
Common Mode Rejection (60 Hz): >65 dB.
Power consumption, MAX: 2 Watts

TS12-CARD

10 Bit NTSC Test Signal Generator, Modular Card

The TS12-CARD, Modular 10 Bit NTSC Test Signal Generator offers 16 precision test signals, 5 dedicated black burst outputs, character source ID, APL settings, bounce and stereo audio tone in a modular card for the MULTIDYNE UTIL-200 and the Grass Valley™ 8500/8800 Modular Trays.
Include SMPTE Color Bars, Multiburst, Multipulse, Cable 5 MHz Sweep, Cable (SIN X)/X, NTC-7 Composite and Combination plus many others.
Video/Audio Lip-sync Signal and vertical interval test signals (VITS), which are fully compatible with the TEK™ VM700A™.

AB-200

Four Channel, Video Automatic Bypass and Signal Change-over Switch, switches to secondary source when primary source fails, 4 Channels, Modular Card

Automatically monitor 4 video channels.
If the video signal goes off the air or if the video circuit is inactive, an alternate video signal is switched onto the line automatically.
The system uses sync recognition and is not fooled by white noise of off air signals.
Ideal for Satellite, Microwave, Off-air Antenna and Cable TV Head-end applications.
If you loose a video feed, automatically put up an emergency message or alternate video signal.
Automatically test continuity and performance of video feeds.
Switch a test signal and character ID onto the circuit when there is a problem or when it is not in use.
The unit features front panel LED status indicators and high impedance loop-through input for the secondary or test signal input.
The user can loop the secondary inputs of several cards together.
The unit offers low loss switching using RF relays.
Program video will loop-through upon power failure.
The modular design is compatible with the MULTIDYNE UTIL-200 and the Grass 8500/8800/8900 trays.

Specifications:
Input
Nominal Levels Video: 1 Vp-p
Return loss: >40 dB
Output
Video Level: 1 Vp-p
Source termination: 75 Ohms
Video
Frequency (DC to 5MHz): +/-0.05 dB
Power consumption, MAX: <2 Watts

CG-200

Video Character ID and Audio Sweep Generator, Modular Card

The CG-200 Video Character ID Generator inserts a character message over video;
manual bypass from program to an alternate video source;
16+ page battery-backed memory;
6 lines with 15 characters;
30 character Vertical Interval ID;
motion bar;
alarm output; 2
0 to 20 KHz Audio Sweep and plugs into the MULTIDYNE UTIL-200 and the Grass Valley ™ 8500/8800 Modular Trays.
The CG-200 is ideal for identifying video feeds and audio feeds.

Video, Pulse & Subcarrier Distribution Amplifier with 3 Cable Equalizers, Back-Porch Clamp & Hum Bucker

SUMMARY

- Over **20 MHz Band-Width** for the distribution of video, pulses and subcarrier for NTSC, PAL and SECAM.
- Up to **3 on-board equalizers** for 3 cable types, including **8281, RG-59U** and another video cable of choice.
- **Equalize up to 1500 Feet** of Belden 8281 cable.
- Front panel Gain and single knob EQ adjustment.
- High impedance, loop-through input and **6 outputs** with source terminations of 75 Ohms.
- **Back-porch clamp** with **40 Volts of hum cancellation**.
- Video present LED indicator.
- AC operation for 110 & 220 VAC.
- Applications include Broadcast TV, Electronic News Gathering, Sporting Events, Field Operations, Cable TV, Telephone, Distance Learning, Teleconferencing, CCTV, LAN, Surveillance, Medical, Industrial, Intelligent Transportation Systems and Production.

ORDERING INFORMATION

VPDA-100 Portable Video Pulse Subc. DA.
- **DUAL option** for two cable type EQ.
- **TRIPLE option** for three cable type EQ.
- **RMT option** for the Triple Rack-mount Kit for 3 VPDA-100 units.

VPDA-2 Video, Pulse & Subcarrier Distribution Amplifier with 2500 Feet Cable Equalizer, Back-Porch Clamp & Hum Bucker

MODEL VPDA-2 RMD

MODEL VPDA-2

SUMMARY

- Over 35 MHz Band-Width for the distribution of video, pulses and subcarrier for NTSC, PAL and SECAM.
- Up to 2 on-board equalizers for 2 cable types, including 8281 and RG-59U.
- Front panel Gain and single knob EQ adjustment.
- Equalize up to 2500 Feet of Belden 8281 cable.
- High impedance, loop-through input and 6 outputs with source terminations of 75 Ohms
- 124 Ohm balanced input and output are available.
- Back-porch clamp with hum cancellation.
- Video present LED indicator.
- 12 VDC operation using BP-90 batteries.
- External AC switch for 110 and 220 VAC operation
- Applications include Broadcast TV, Electronic News Gathering, Sporting Events, Field Operations, Cable TV, Telephone, Distance Learning, Teleconferencing, CCTV, LAN, Surveillance, Medical, Industrial, Intelligent Transportation Systems and Production.

The VPDA-2 Video, Pulse, Subcarrier Distribution Amplifier and Clamper includes two on-board equalizers for two cable types. The unit equalizes from 0-2,500 feet of 8281 and 59U cable with a single control. The unit features a fast AC/DC feedback clamping circuit which samples the error voltage on the video back porch. The clamping circuit will actually extract any hum present in the video picture on a line-by-line basis. Additional features include a loop-through input, 6 outputs, cancellation and extraction of up to 12 Volts p-p of hum, AC/DC powered, less than 0.1% differential gain and 0.05 degrees differential phase and is available in portable, single rack-mount and dual rack-mount configurations.

A switch selectable 124 Ohm Balanced Video Cable Input is optionally available for the VPDA-2.
Switch select either a 75 Ohm loop-through BNC video cable input or a 124 Ohm balanced video cable input.

An Automatic By-pass feature is available with the VPDA-2.
If the AC power should fail, the video input is automatically switched directly to output number 1.

ORDERING INFORMATION

VPDA-2 VIDEO, PULSE & SUBCARRIER DISTRIBUTION AMPLIFIER With 2500 Feet CABLE EQUALIZER, BACK-PORCH CLAMP & HUM BUCKER -

RMS for Single Rack-mount Unit. -
RMD for Dual Rack-mount Unit.

WVDA-100-RMD 200 MHz Wide Band Video & 50 Mega Bit/Sec Data Distribution Amplifier

SUMMARY

- Over **200 MHz Band-Width** ideal for the distribution of **Wide-Band Composite Video** and **High Speed Data.**
- Distributes over **50 Mega Bit/Sec Data** including **DS3 Telephone Compressed Digital Video.**
- Designed to Bell Atlantic specifications.
- Includes 2 amplifiers in a 1 rack-unit package.
- Each amplifier features a 75 Ohm terminated input and 6 outputs with source terminations of 75 Ohms.
- **Post-Equalize 0-500 feet** or Pre-Equalize 0-200 feet of 8281 type cable with exceptional accuracy.
- DC restoration circuit provides AC or DC coupling.
- Video present LED indicator.
- AC power operation, 110 and 220 VAC.
- Applications include the distribution of **HDTV**, Computer Graphics, DS3, DS1 and Digital Data.

WVDA-100-RMD Rear View

SPECIFICATIONS

Conforms to the 44.736 Mb/s DS3 specifications.

Bandwidth, 3 dB	150 MHz
Frequency response	
10 Hz to 5 MHz	+/-0.05 dB
5 MHz to 10 MHz	+/-0.1 dB
10 MHz to 40 MHz	+/-0.25 dB
40 MHz to 80 MHz	+/-0.5 dB
Post-Equalization Range	0 - 500 Ft of 8281 cable
Pre-Equalization Range	0 - 200 Ft of 8281 cable
Equalization Accuracy	0.05 dB/dB of loss to 10 MHz 0.1 dB/dB of loss 10 MHz to 40 MHz 0.2 dB/dB of loss 40 MHz to 90 MHz
Differential Gain	<0.2 %
Differential Phase	<0.2 deg.
Line or Field Tilt	<0.5 %
Signal to Noise	> 80 dB
Common Mode Rejection (60 Hz)	>65 dB
Return Loss, to 5 MHz	>42 dB
Power consumption, MAX	4 Watts
AC power	115 or 230 VAC
Dimensions (LxWxH)	3 3/4" x 19" x 1 3/4"

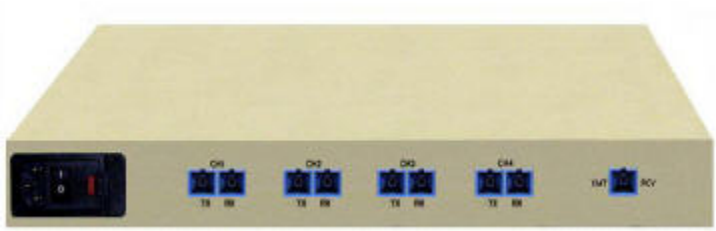
Video Distribution Amplifier Selector Guide:

	Bandwidth	Clamp	Hum-bucker	Isolation Transformer	Cable Equalizer	Automatic Gain & EQ	AES/EBU	Modular	Portable/ Stand-alone
VAGC-200	20 MHz	Yes	Yes		3500 feet, dual cable type	Yes		Yes	
VDA-8505	20 MHz	High Speed	Yes	Yes, optional	3500 feet, dual cable type		Yes	Yes	
VDA-220	20 MHz	Yes	Yes		1500 feet, dual cable type		Yes	Yes	
VDA-210	20 MHz	Yes	Yes		1500 feet		Yes	Yes	
VDA-202	6 MHz	Yes						Yes	
VDA-201	6 MHz							Yes	
VDDA-200	10 MHz	Yes	Yes		1500 feet, adj. delay			Yes	
WVDA-250	200 MHz	Yes	Yes		500 feet			Yes	
VAGC-100	20 MHz	Yes	Yes		3500 feet, dual cable type	Yes			Yes, 110/220 VAC, 12 VDC, optional -RMT kit
VPDA-2	20 MHz	Yes	Yes		2500 feet, single control		Yes		Yes, 110/220 VAC, 12 VDC 2 bat., single & dual RM avail
VPDA-100	20 MHz	Yes	Yes		1500 feet, triple cable type		Yes		Yes, 110/220 VAC, 12 VDC, optional -RMT kit
WVDA-100-RMD	250 MHz	Yes	Yes		500 feet		Yes		Yes, 110/220 VAC, standard dual RM

Audio Distribution Amplifier Selector Guide:

	Bandwidth	Clamp	Hum-bucker	Isolation Transformer	Cable Equalizer	Automatic Gain & EQ	AES/EBU	Modular	Portable/ Stand-alone
AAGC-200	20-20KHz mono & Stereo		Yes			Yes		Yes	
ADAS-200	20-20KHz mono & Stereo		Yes		VU Meter option			Yes	
ADAM-200	20-20KHz mono		Yes		VU Meter option			Yes	
ADA-7	20-50KHz		Yes	Yes, Isolated in and outs	VU Meter				Yes, 110/220 VAC, 12 VDC, 2 bat., dual RM available

Optical Distribution Amplifier and Wavelength Re-mapper



SUMMARY

Multidyne has introduced the ODA-4000 Series of Optical Distribution Amplifiers and Wavelength Re-mappers.
The unit permits the replication and regeneration of one digital fiber optic signal into as many as four different fiber optic signals.
One fiber optic source can be Multicast to four destinations.

The input and output ports can be configured independently.
All ports are available for Multimode, Singlemode and CWDM for 850, 1310, 1470, 1490, 1510, 1530, 1550, 1570, 1590 and 1610 nm wavelengths.
Stand-alone and Rack-mount versions are available.

IF Fiber Optic Links

- Broadband Transmission – 70/140 MHz
- Flat frequency response from 10 to 200 MHz
- Protocol Transparent – transmits all video, audio and data modulation formats
- Transmission distances ranging from 100 meters to 50km
- Gain Control, Indicators, Alarms and Monitors
- Single or Multi Channel up or downlink transmission
- Interface with M & C Systems for remote signal monitoring

SUMMARY

MULTIDYNE's™ IFL-7000 Series IF Fiber Links offer a high performance, cost effective alternative to conventional coaxial-cabled systems. The system covers the range of 10 to 200 MHz. They are used for the transmission over Singlemode fiber optic cable of modulated outputs received from modems or up/downconverters. Inputs of 70 or 140MHz require no modifications or adjustments.

The IFL-7000 functions as a transparent link between the satellite antenna and the Network Operations Center (NOC) or control room. System limitations in using coaxial cable are overcome by the simplicity and performance of fiberoptic connections to provide the highest levels in signal quality.

The system consist of an optical transmitter, which receives the RF signal from a modem, transceiver, or down converter, and an optical receiver that connects to an upconverter, modem, or transceiver. All satellite modulation schemes are accommodated digital or analog. Format independence is achieved by inherently low phase noise. The RF signal is converted at the transmitter to an optical signal by direct modulation of a semiconductor laser diode. At the receive end, the optical signal is converted back to an RF signal by a photodiode.

All units are optionally available as outdoor units (ODUs), capable of operating in extreme conditions. For more information regarding the IF ODUs, contact MULTIDYNE.

MULTIDYNE offers a wide range of products to meet all your specific satcom needs. Short distance downlink applications can be achieved using our cost effective isolated Fabry Perot products while professional and more demanding long distance or multi-carrier applications can be met using our high dynamic range DFB lasers - delivering excellent signal quality even under varying conditions.

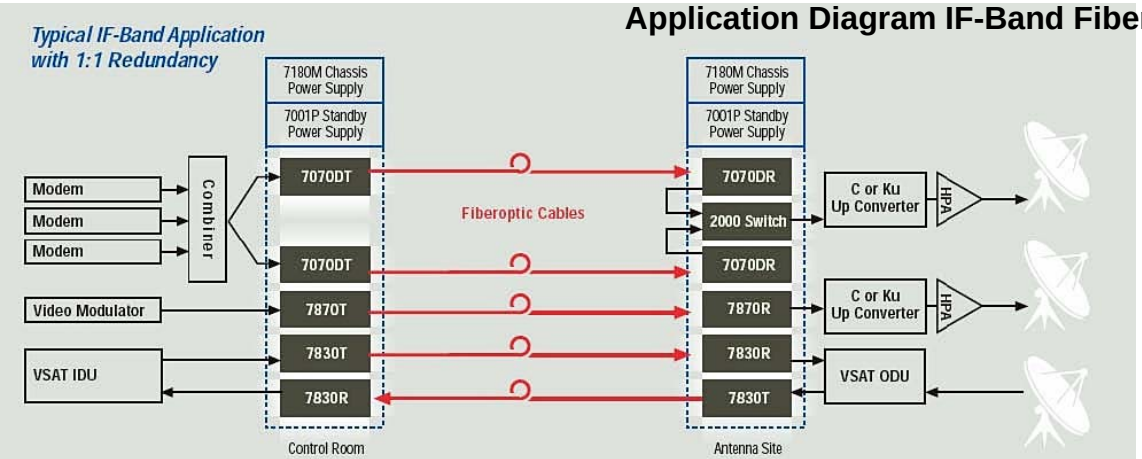
Product options include Automatic and Manual Gain Control. Automatic Gain Control (AGC) at the transmitter site sets and maintains optimum operation over a wide range of input signal levels. At the receiver site AGC maintains the RF level regardless of optical power or distance from transmission site. Alternatively, Manual Gain Control (MGC) at the transmitter site allows the system operator to maintain optimum operation over a wide range of input signal levels on the transmitter site and RF output level on the receiver site. Front panel RF test ports, LEDs, back panel monitors and alarms allow for complete status system monitoring and for interfacing with M&C systems.

The IFL-7000 system consists of compact modules that plug into a 19". wide 3U chassis/power supply. The chassis allows accommodation of up to 8 IFL modules in addition to main and standby power supplies. Standalone versions are also available. Accessories are available for the IFL-7000 to accommodate the wide variety of system design preferences in use.

IF Interfacility Links

Model	Application	Frequency	Optical Budget	Gain Control	Laser
IFL-7830	Short Distance, Single Channel Video	10-200 MHz	3 dB / 2 Km	Manual (Rx Only)	Isolated Fabry Perot
IFL-7870	High Density, Multi-Channel	10-200 MHz	8 dB / 15 Km	Manual (Rx only)	DFB
IFL-7070D	High Dynamic Range, Multi Channel	10-200 MHz	16 dB / 40 Km	Manual/Automatic	DFB
IFL-7070D-15	Ultra Long Distance	10-200 MHz	16 dB / 60 Km	Manual/Automatic	DFB

Application Diagram IF-Band Fiber Optic System



IFL-7830

The 7830 Link transmits an IF signal over singlemode fiber from a satellite modem to satellite antenna equipment up to 2 kilometers away. This cost effective link is intended primarily for single video channel uplinking delivering exceptional signal quality independent of distance. The 7830 IFL has a high power input (-25 to -5 dBm).

IFL-7870

The 7870 Fiberoptic Interfacility Link (IFL) is the first product to be released in the new generation of high performance 7800 series of IF fiberoptic links. The 7870 IFL is designed and optimized for high density/multi-channel short to medium distance applications (up to 15 kms) with high input/output power levels.

IFL-7070D

The Long Distance 7070D Multi-Channel Link is a high dynamic range fiberoptic link for the most demanding of satellite communication applications. The 7070D transmits multiple IF signals up to 45 kilometers, providing excellent signal quality under varying conditions encountered in multi-channel environments. Features include automatic or manual gain control and front panel RF test ports.

IFL-7070D-15

The 7070D-15 high dynamic range IFL, with a 1550nm laser, enables ultra long transmission of multiple IF signals over singlemode fiber. Distances of over 60 kilometers can be easily attained through minimal optical loss (<0.27dB per km). Wave division multiplexing is also made possible using this superior link along with the standard 1310nm model 7070D.

RF Characteri

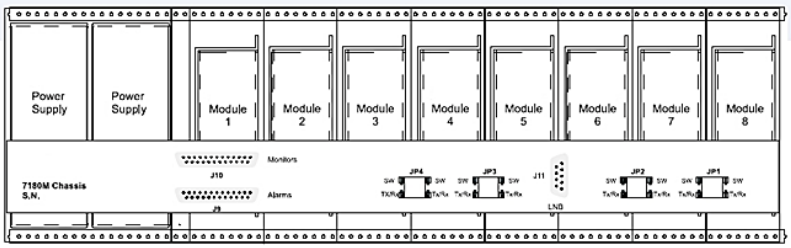
	7830	7870	7070D	7070D-15
Frequency Range	10-200 MHz	10-200 MHz	10-200 MHz	10-200 MHz
Flatness	±0.25 dB @ 36 MHz ±0.75 dB @ full band	±0. 25 dB @ 36 MHz ±0.4 dB @ full band	±0. 25 dB @ 36 MHz ±1.0 dB @ full band	±0.2 dB @ 36MHz ±1.0 dB @ full band
VSWR (75Ω)	1.43	1.38	1.3	1.3
CNR(min)[1]	70dB @ 1MHz /3Km	70dB @ 1MHz /15Km	60dB @ 1MHz /30 Km	60dB @ 1MHz /50 Km
Input Signal (max)	-5 dBm	-5 dBm	-20 dBm	-20 dBm
Output Signal (max)	-5 dBm	-5 dBm	-15 dBm	-15 dBm
Gain Stability[3]	± 0.25 dB @ 24 hours	± 0.25 dB @ 24 hours	± 0.25 dB @ 24 hours	± 0.25 dB @ 24 hours
Transmitter Gain Range	N/A	N/A	Up to 20 dB	Up to 20 dB
Receiver Gain Range	Up to 20 dB	Up to 20 dB	Up to 20 dB	Up to 20 dB
OIP3[1]	+15 dBm	+20 dBm	+5 dBm	+5 dBm
Noise Figure (typical)[2]	28 dB	25 dB	28 dB	28 dB
Group Delay	<1 ns (20-200 MHz)	< 1 ns (20-200 MHz)	< 1 ns (20-200 MHz)	< 1 ns (20-200 MHz)
SFDR[1]	107 dB/Hz$^{2/3}$ @ -5 dBm (typ)	112 dB/Hz$^{2/3}$ @ -5 dBm (typ)	100 dB/Hz$^{2/3}$ @ -20 dBm (typ)	100 dB/Hz$^{2/3}$ @ -20 dBm (typ)

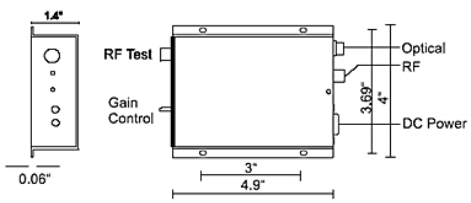
1 @ Maximum Input Power
2 @ Maximum Input @ 1 dB Optical Loss @ Unity Gain
3 @ Constant Temperature

Optical Characteristics

	7830	7870	7070D	7070D-15
Optical Wavelength	1310 nm ±10 nm	1310 nm ±10 nm	1310 nm ±10 nm	1550 nm ±10 nm
Optical Power Output	-3 dBm (min)	3 dBm (min)	3 dBm (min)	3 dBm (min)
Optical Connector	FC/APC	FC/APC	FC/APC	FC/APC
Optical Budget	3 dB/ 2 Km *	8 dB / 15 Km *	16 dB / 40 Km *	16 dB / 60 Km *

*1310: 0.4 dB/Km Fiber Only, 1550: 0.27 dB/Km Fiber Only





Physical Characteristics	
Chassis Capacity	8 plug-ins
Chassis Size	19" x 5.25" x 7"
Unit Size	5" x 4.8" x 1.6"
RF Connector	F-type
Power For Rackmount Chassis	110 or 220 VAC 50/60 Hz 60 watts (max)
Transmitter	15 VDC @ 400 mA (max)
Receiver	15 VDC @ 300 mA (max)
Operating Temp. Range	-10°C to 55°C
Storage Temp. Range	-40°C to 85°C

Accessories	
Model	Description
2000	1:1 Redundancy
2100	Pre/Post RF Amplifier
2380/2300	Relay Adapter
7050	Serial Transceiver 1-5 Channels
7100M	6 Slot Chassis / Power Supply
7000S	7100M Standby Power Supply
7180M	8 Slot Chassis / Power Supply
7001P	7180M Standby Power Supply

Options	
Model	Description
-L	LNB Biasing from TX input option
-50	50 Ω BNC option
-25	Extended Frequency response to 2500 MHz
-SMA	SMA connector

ORDERING INFORMATION

IF 70/140MHz, Broadband Fiber Optic, Stand-alone, Singlemode: (SIN 58-6)

IFL-7870T ..... High Dynamic Range IF transmitter (to 15km) (10 - 200 MHz)
IFL-7870R ..... High Dynamic Range IF receiver (10 - 200 MHz)
IFL-7070D-T ..... High Dynamic Range transmitter, DFB, (to 25km)
IFL-7070D-R ..... High Dynamic Range receiver, DFB, (to 25km)

L-Band, 950-2150MHz, Broadband Fiber Optic, Stand-alone, Singlemode: (SIN 58-6)

LFL-7320T-3dB ..... 950 to 2150MHz Single mode Transmitter, Stand-alone, Flange Mount configuration. Max input -20dB. F type 75 ohm RF interface. 3dBm optical budget, FC/APC optical connector.
LFL-7320R ..... 950 to 2150MHz Single mode Receiver, Stand-alone, Flange Mount configuration. RF link gain +20dB at 0dBm optical loss. F type 75 ohm RF interface. FC/APC optical connector.
LFL-7000T-6dB ..... 950 to 2150MHz Single mode Transmitter, Stand-alone, Flange Mount configuration. Max input -20dB. F type 75 ohm RF interface. 6dBm optical budget, FC/APC optical connector.
LFL-7000R ..... 950 to 2150MHz Single mode Receiver, Stand-alone, Flange Mount configuration. RF link gain +20dB at 0dBm optical loss. F type 75 ohm RF interface. , FC/APC optical connector.
LFL-7225T-16dB ..... 950 to 2150MHz Single mode Transmitter, Stand-alone, Flange Mount configuration. Max input -20dB. F type 75 ohm RF interface. +16dBm optical budget, FC/APC optical connector.
LFL-7225R ..... 950 to 2150MHz Single mode Receiver, Stand-alone, Flange Mount configuration. RF link gain +20dB at 0dBm optical loss. F type 75 ohm RF interface. , FC/APC optical connector.

IFL & LFL Series, IF & L-Band Accessories (SIN 58-6)

7000 ..... Wall mount power supply
7180M ..... 19" Chassis w/ 8 hot swap slots incl 1 ea 110VAC, 220VAC selectable power supply
7001P ..... Standby Power Supply, Plug-in - 110-220VAC 50/60 Hz selectable (for use with 7180M)
STD-110-PS ..... Standalone power supply, 110 V 50/60 Hz input wall wart type.
-STD ..... Standalone conversion kit
-15 ..... 1550nm laser option (in lieu of standard 1310 nm laser)
RELAY ..... Relay adapter to bring out alarms to a dry contact.
CWDM Laser option CWDM laser upgrade
3000M ..... WDM chassis mount MUX Module (2 optical inputs, 1 optical output.)
3000E ..... 8 Channel CWDM Multiplexer
3000U ..... 8 Channel CWDM De-multiplexer

L-Band Fiber Optic Links

- Broadband Transmission – 950-2150 MHz (2500 MHz available)
- 3, 6 & 16 dB optical budget versions available.
- Protocol transparent – transmits all video,audio and data modulation
- Wide dynamic, low noise.
- Transmission distances ranging from 100m to 60km
- Gain Control, Indicators, Alarms and Monitors
- Single or Multi Channel up or downlink transmission
- Interface with M & C Systems for remote signal monitoring

SUMMARY

MULTIDYNE's LFL-7000 Sereis L-Band Fiber Optic Link offer a high performance, cost effective alternative to conventional coaxial-cabled systems. L-band Fiber Link cover the range of 950 - 2150 MHz (with optional coverage to 2500 MHz). They are used for the transmission over Singlemode fiber optic cable of block downconverted C, extended C, X or Ku band signals. Transmission of L-band Inmarsat signals as well as communication radar transmission and reception are also made possible using MULTIDYNE's L-Band range of products.

The LFL-7000 series functions as a transparent link between the satellite antenna and the Network Operations Center (NOC) or control room. System limitations in using coaxial cable are overcome by the simplicity and performance of fiberoptic connections to provide the highest levels in signal quality.

The system consist of an optical transmitter, which receives the RF signal from the LNB, and an optical receiver that connects to a satellite receiver. All satellite modulation schemes are accommodated - digital or analog. Format independence is achieved by inherently low phase noise. The RF signal, an entire L-Band polarization, is converted at the transmitter to an optical signal by direct modulation of a semiconductor laser diode. At the receive end, the optical signal is converted back to an RF signal by a photodiode.

MULTIDYNE offers a wide range of products to meet all your specific satcom needs. Short distance downlink applications can be achieved using our cost effective isolated Fabry-Perot products while professional and more demanding long distance or multi-carrier applications can be met using our high dynamic range DFB lasers - delivering excellent signal quality even under varying conditions.

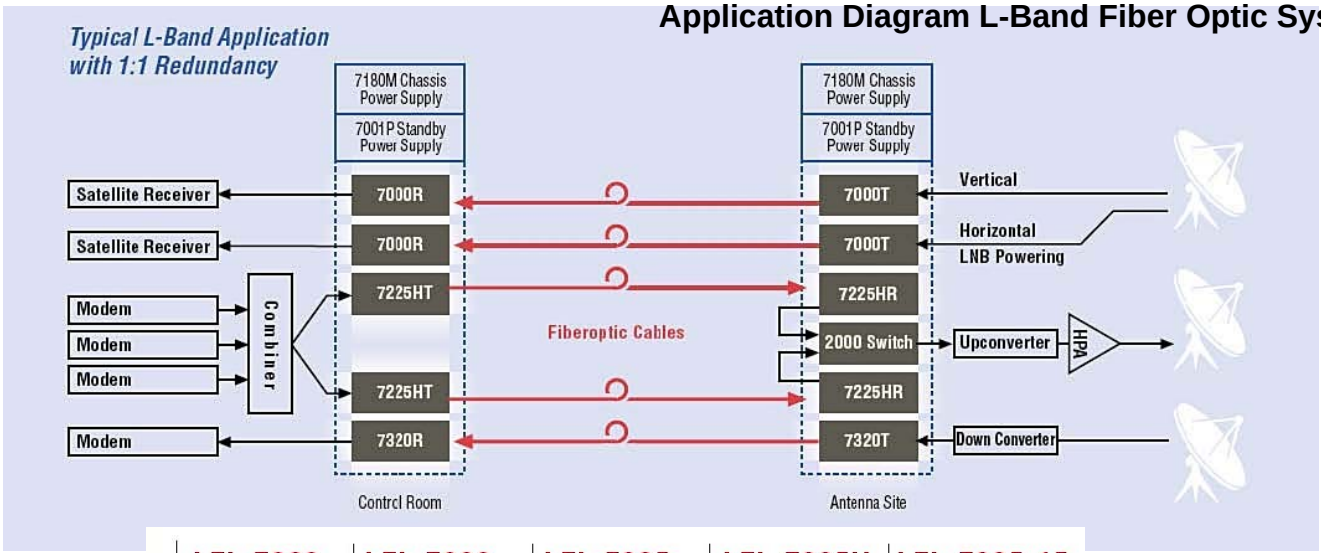
Product options include Automatic and Manual Gain Control. Automatic Gain Control (AGC) at the transmitter site sets and maintains optimum operation over a wide range of input signal levels. At the receiver site AGC maintains the RF level regardless of optical power or distance from transmission site. Alternatively, Manual Gain Control (MGC) at the transmitter site allows the system operator to maintain optimum operation over a wide range of input signal levels on the transmitter site and RF output level on the receiver site.

Front panel RF test ports, LEDs, back panel monitors and alarms allow for complete status system monitoring and for interfacing with M&C systems. All transmitter units can provide 14VDC/350mA for optional LNB powering. The LFL-7000 system consists of compact modules that plug into a 19" wide 3U chassis/power supply. The chassis allows the accommodation of up to 8 modules in addition to main and standby power supplies. Standalone versions are also available. Accessories are available to accommodate the wide variety of system design preferences in use.

L-Band Interfacility Links

Model	Application	Frequency	Optical Budget	Gain Control	Laser
LFL-7320	Short Distance Up/Downlink	950-2150 MHz	3 dB / 2 km	Manual	Isolated Fabry-Perot
LFL-7000	Intermediate Distance Up/Downlink	950-2150 MHz	6 dB / 10 km	Automatic/ Manual	Isolated Fabry-Perot
LFL-7225	Long Distance, Multi Carrier Up/Downlink	950-2150 MHz	16 dB / 40 km	Manual	DFB
LFL-7225H	High Power, Multi Carrier Up and Up/Downlink	950-2150 MHz	3 dB / 2 km	Manual	DFB
LFL-7225-15	Ultra Long Distance, Multi Carrier, WDM, Up/Downlink	950-2150 MHz	16 dB / 60 km	Manual	DFB

Application Diagram L-Band Fiber Optic System



LFL-7320

The 7320 System transmits and receives an entire L-Band polarization over singlemode fiber from a satellite antenna to reception equipment up to 2 kilometers away while preserving signal quality.

LFL-7000

The 7000 Advanced Interfacility Link transmits and receives an entire L-Band RF signal over single-mode fiber from a satellite antenna LNB to a control room up to 10 kilometers away, guaranteeing superior signal quality. This feature rich link includes auto or manual gain control and front panel RF test ports.

LFL-7225

The 7225 Long Distance Multi-Channel system is a high dynamic range fiberoptic link. The 7225 transmits and receives an entire L-Band polarization up to 40 kilometers, providing excellent signal quality under varying conditions encountered in multi-channel environments.

LFL-7225H

The 7225H is a multi-carrier link designed for high input power levels. Featuring a high dynamic range laser, the link is ideal for both up and down link applications. The 7225H provides the same enhanced performance as the 7225, but allows higher input levels which match the power output of today's L band modems.

LFL-7225-15

The 7225-15 high dynamic range 1550nm laser enables ultra long trans-mission of an entire L-Band polarization. Distances of over 60 kilometers can be easily attained through minimal optical loss (<0.25 dB per km). Wave division multiplexing is also made possible using this superior link.

RF Characteristics

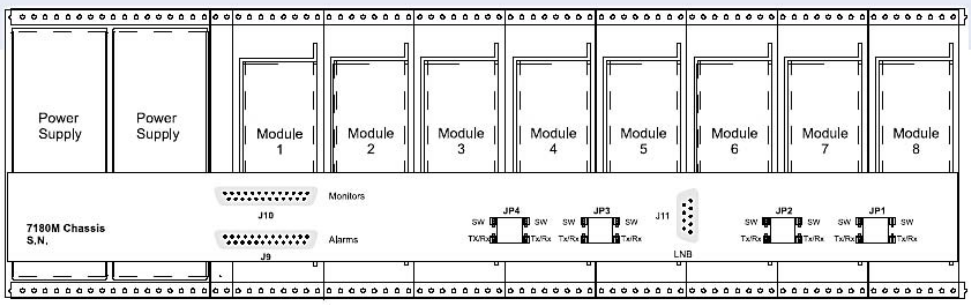
	7320	7000	7225	7225H	7225-15
Frequency Range	950-2150 MHz	950-2150 MHz	950-2150 MHz	950-2150 MHz	950-2150 MHz
Flatness	±1.5 dB max ±0.25 dB @ any 36 MHz	±1.25 dB max ±1 dB typical ±0.25 dB @ any 36 MHz	±1.25 dB max ±1 dB typical ±0.2 dB @ any 36 MHz	±1.25 dB max ±1 dB typical ±0.2 dB @ any 36 MHz	±1.25 dB max ±1 dB typical ±0.2 dB @ any 36 MHz
VSWR 75 Ω	1:1.6	1:1.6	1:1.6	1:1.6	1:1.6
Intermodulation Products	-40 dBc	-40 dBc	-50 dBc	-40 dBc	-50 dBc
CNR (min)[1]	45 dB @ 36 MHz / 2 km	40 dB @ 36 MHz / 10 km	40 dB @ 36 MHz / 10 km	60 dB @ 36 MHz / 2 km	40 dB @ 36 MHz / 20 km
Input Signal (max)	-20 dBm	-20 dBm	-20 dBm	-5 dBm	-20 dBm
Output Signal (max)	-20 dBm	-20 dBm	-20 dBm	-5 dBm	-20 dBm
Maximum Input Power (without damage)	+10 dBm	+10 dBm	+10 dBm	+10 dBm	+10 dBm
Gain Stability	±0.25 dB @ 24 hrs	±0.25 dB @ 24 hrs	±0.25 dB @ 24 hrs	±0.25 dB @ 24 hrs	±0.25 @ 24 hrs
Link Gain	20 dB	20 dB	20 dB	20 dB	20 dB
OIP3 (dBm)	0	0 dBm	+5 dBm	+ 15 dBm	+5 dBm
Noise Figure (typical)	22 dB[2]	20 dB[3]	15 dB[3]	25 dB[2]	18 dB[3]
SFDR[1]	99 dB Hz 2/3 @ -25 dBm (typ)	100 dB Hz 2/3 @ -25 dBm (typ)	102 dB Hz 2/3 @ -25 dBm (typ)	109 dB Hz 2/3 @ -25 dBm (typ)	102 dB Hz 2/3 @ -25 dBm (typ)

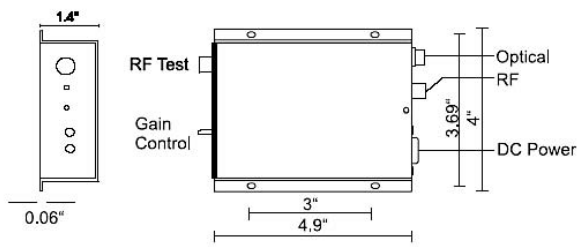
[1] @ Maximum Input Power, [2] @ Maximum Input @ 1 dB Optical Loss @ Unity Gain [3] Input power of -40 dBm @ 5 dB Optical Loss

Optical Characteristics

	7320	7000	7225	7225H	7225-15
Optical Wavelength	1310 nm ±10 nm	1310 nm ±10 nm	1310 nm ±10 nm	1310 nm ±10 nm	1550 nm ±10 nm
Optical Power Output	-3 dBm (min.)	-3 dBm (min.)	+3 dBm (min.)	+3 dBm (min.)	+3 dBm (min.)
Optical Connector	FC/APC	FC/APC	FC/APC	FC/APC	FC/APC
Optical Budget	3 dB / 2 km*	6 dB / 10 km*	16 dB / 40 km*	3 dB / 2 km*	16 dB / 60 km*

*1310 0.4 dB/km Fiber Only, 1550 0.25 dB/km Fiber Only





Physical Characteristics

Chassis Capacity	8 plug-ins
Chassis Size	19" x 5.25" x 7"
Unit Size	5" x 4.8" x 1.6"
RF Connector	F-type
Power For Rackmount Chassis	110 or 220 VAC 50/60 Hz 60 watts (max)
Transmitter	15 VDC @ 400 mA (max)
Receiver	15 VDC @ 300 mA (max)
Operating Temp. Range	-10°C to 55°C
Storage Temp. Range	-40°C to 85°C

Accessories

Model	Description
2000	1:1 Redundancy
2100	Pre/Post RF Amplifier
2380/2300	Relay Adapter
7050	Serial Transceiver 1-5 Channels
7100M	6 Slot Chassis / Power Supply
7000S	7100M Standby Power Supply
7180M	8 Slot Chassis / Power Supply
7001P	7180M Standby Power Supply

Options

Model	Description
-L	LNB Biasing from TX input option
-50	50 Ω BNC option
-25	Extended Frequency response to 2500 MHz
-SMA	SMA connector

ORDERING INFORMATION

IF 70/140MHz, Broadband Fiber Optic, Stand-alone, Singlemode: (SIN 58-6)

IFL-7870T — High Dynamic Range IF transmitter (to 15km) (10 - 200 MHz)
IFL-7870R — High Dynamic Range IF receiver (10 - 200 MHz)
IFL-7070D-T — High Dynamic Range transmitter, DFB, (to 25km)
IFL-7070D-R — High Dynamic Range receiver, DFB, (to 25km)

L-Band, 950-2150MHz, Broadband Fiber Optic, Stand-alone, Singlemode: (SIN 58-6)

LFL-7320T-3dB — 950 to 2150MHz Single mode Transmitter, Stand-alone, Flange Mount configuration. Max input -20dB. F type 75 ohm RF interface. 3dBm optical budget, FC/APC optical connector.
LFL-7320R — 950 to 2150MHz Single mode Receiver, Stand-alone, Flange Mount configuration. RF link gain +20dB at 0dBm optical loss. F type 75 ohm RF interface. FC/APC optical connector.
LFL-7000T-6dB — 950 to 2150MHz Single mode Transmitter, Stand-alone, Flange Mount configuration. Max input -20dB. F type 75 ohm RF interface. 6dBm optical budget, FC/APC optical connector.
LFL-7000R — 950 to 2150MHz Single mode Receiver, Stand-alone, Flange Mount configuration. RF link gain +20dB at 0dBm optical loss. F type 75 ohm RF interface. , FC/APC optical connector.
LFL-7225T-16dB — 950 to 2150MHz Single mode Transmitter, Stand-alone, Flange Mount configuration. Max input -20dB. F type 75 ohm RF interface. +16dBm optical budget, FC/APC optical connector.
LFL-7225R — 950 to 2150MHz Single mode Receiver, Stand-alone, Flange Mount configuration. RF link gain +20dB at 0dBm optical loss. F type 75 ohm RF interface. , FC/APC optical connector.

IFL & LFL Series, IF & L-Band Accessories (SIN 58-6)

7000 — Wall mount power supply
7180M — 19" Chassis w/ 8 hot swap slots incl 1 ea 110VAC, 220VAC selectable power supply
7001P — Standby Power Supply, Plug-in - 110-220VAC 50/60 Hz selectable (for use with 7180M)
STD-110-PS — Standalone power supply, 110 V 50/60 Hz input wall wart type.
-STD — Standalone conversion kit
-15 — 1550nm laser option (in lieu of standard 1310 nm laser)
RELAY — Relay adapter to bring out alarms to a dry contact.
CWDM Laser option — CWDM laser upgrade
3000M — WDM chassis mount MUX Module (2 optical inputs, 1 optical output.)
3000E — 8 Channel CWDM Multiplexer
3000U — 8 Channel CWDM De-multiplexer

6 Channel, 24 Bit, Audio Fiber Optic Multiplexer

SUMMARY

- Supports 6 audio channels and 3 Simplex RS-232 data channels over one optical fiber.
- Exceeds RS-250C Short-haul and Broadcast Video specifications.
- 24 Bit Audio flat from 20 to 20K Hz, S/N greater than 90 dB and THD less than 0.05%.
- Front panel audio gain controls.
- Audio and Optical front panel status indicators with dry alarm relay contacts.
- Modular configurations with all optical wavelengths, LED Multimode and Laser Single-mode.
- Coarse Wave-division Multiplexing (CWDM) systems are available for up to 8 wavelengths over ONE optical fiber.
- Available in Stand-alone, Rack-mountable (DAM-2000) and Modular (DAM-2200) configurations.
- Optical budget of up to 30 dB for Single-mode.
- Universal AC operation for 85-265 VAC and Telco DC operation for 48 VDC.
- Now support analog video, analog audio, serial digital video and digital audio in the same tray.
  The UTIL-200-DVM Tray supports the DVM-2200 Video, 6 Audio and 3 Data Transport Cards, the DTV-220/230 SDI Transport Cards, the DTV-201/210F SDI Fan-out and Reclocking Cards, the DAM-2200 6 Audio and 3 Data Transport Cards and the AES-2200 6 AES/EBU and 3 Data Transport Cards.
- Applications include links from studio to transmitter (STL), studio to studio, studio to CATV head-end, common carrier, RBOC Telco circuits, distance learning, Intelligent Transportation Systems & back-haul feeds from special events.

SPECIFICATIONS

Audio Performance:

Signal to noise .....> 90 dB
Frequency response to **20 Hz to 20 KHz**.....< +/- 0.1 dB
Distortion .....< 0.05 %
Audio output level, adjustable .....Unity, +/- 6 dBm
Maximum input & output level, 600 Ohm termination .....+18 dBm
Audio output impedance, balanced.....50 Ohms
Audio input impedance, balanced (selectable) .....600 Ohms or High
Data channels .....3 RS-232C at 9600 Baud
Delay, throughput.....1.24 micro sec.
Power dissipation.....< 15 Watts, per unit
AC operation .....110 or 220 VAC (optional 48VDC)
Operating temperature .....0 to +50 °C
Portable and Wall-mount:.....7" L x 5 ¾" W x 1 ¾" H
Triple Rack-mount Kit for 3 modules (Part number -RMT):.....7" L x 19" W x 1 ¾" H
Specifications subject to change without notice.

ORDERING INFORMATION

Stand-alone and Rack-mount:

DAM-2000-FTX-2, 24 Bit Audio and Data Fiber Optic Transmitter, 1300 nm Multimode with ST connector, stand-alone.
DAM-2000-FTX-50, 24 Bit Audio & Data Fiber Optic Transmitter, 1300 nm Single-mode with FC connector, stand-alone.
DAM-2000-FTX-6, 24 Bit Audio and Data Fiber Optic Transmitter, 1550 nm Single-mode with FC connector, stand-alone.
DAM-2000-FTX-7-xxxx, with DWDM 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm Single-mode Laser –8 dBm with FC connector
DAM-2000-FRX-2, 24 Bit Audio and Data Fiber Optic Receiver, Sensitivity –24 dBm, Multimode with ST connector, stand-alone.
DAM-2000-FRX-50, 24 Bit Audio and Data Fiber Optic Receiver, Sensitivity –28 dBm, Single-mode with FC connector, stand-alone.

Modular:

DAM-2200-FTX-2, 24 Bit Audio & Data Fiber Optic Transmitter, 1300 nm Multimode w/ ST connector, modular for UTIL-200-DAM Tray.
DAM-2200-FTX-50, 24 Bit Audio & Data Fiber Optic Transmitter, 1300nm Single-mode w/ FC connector, modular for UTIL-200-DAM Tray.
DAM-2200-FTX-6, 24 Bit Audio & Data Fiber Optic Transmitter, 1550nm Single-mode with FC connector, modular for UTIL-200-DAM Tray.
DAM-2200-FTX-7-xxxx, with DWDM 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm Single-mode Laser –8 dBm with FC connector.
DAM-2200-FRX-2, 24 Bit Audio and Data Fiber Optic Receiver, Sens. –24 dBm, Multimode with ST connector, modular for UTIL-200-DAM Tray.
DAM-2200-FRX-50, 24 Bit Audio & Data Fiber Optic Receiver, Sens. –28 dBm, Singlemode w/ FC connector, modular for UTIL-200-DAM Tray.

Options:

UTIL-200-DVM-2RU-AC, Analog, Digital & Fiber, 10 Slot, 2RU, Modular Utility Tray, w/ one 85-265 VAC Power Supply & Line Cord
PS-200-DVM-AC, Modular 85-265 VAC Power Supply & Line Cord for 200 series trays
UTIL-200-DVM-2RU-48VDC, Analog, Digital and Fiber, 10 Slot, 2 RU, Modular Utility Tray, with one 36-60 VDC Power Supply
PS-200-DVM-48VDC, Modular 36-60 VDC Power Supply for 200 series trays
-**WDM-95**, Wave Division Multiplexer, (ask about CWDM options)
-**RMT**, Triple Rack-mount Kit.
-**BLANK**, Blank Panel.

40 Channel, 24 Bit Audio Fiber Optic Multiplexer

SUMMARY

- Supports **40 audio channels** over **one optical fiber or wavelength.**
- Exceeds **RS-250C Short-haul** and **Broadcast** specifications.
- **24 Bit Audio** flat from **20 to 20K Hz, S/N** greater than **90 dB** and **THD** less than **0.05%.**
- **XLR Interface & Patch Panels,** transmitter and receiver each require 2 panels.
- **Front panel audio gain controls.**
- Audio and Optical front panel status indicators with dry alarm relay contacts.
- **Stand-alone** and **Rack-mount** configurations with all optical wavelengths, **LED Multimode** and **Laser Single-mode.**
- Coarse Wave-division Multiplexing (CWDM) systems are available for up to 8 wavelengths over *ONE* optical fiber.
- **Optical budget** of up to **30 dB** for Single-mode.
- AC operation for **110 or 220 VAC**.

The DAM-2000/2200 series is ideal for applications where up to 40 high quality audio channels need to be sent over fiber such as concerts, live productions, recording studios, church production, staging, theatrical productions, studio to transmitter (STL), studio to studio, common carrier, RBOC Telco circuits, distance learning and back-haul feeds from special events.
Featuring full 20Hz to 20KHz audio bandwidth, S/N of 90dB and a THD of 0.05% the DAM series meets the rigorous broadcast industry standards.
The XLR interface panel permits quick and easy connections and serves as a patch panel. Monitor and control functions include audio and optical front panel status indicators with dry alarm relay contacts.
The DAM-4000 is a compact unit designed for stand alone, wall mount or rack-mount applications. Advanced CWDM technology is available which enables up to 16 units to be put on one strand of fiber.

SPECIFICATIONS

Signal to noise.....> 90 dB
Frequency response to 20 Hz to 20 KHz.....< +/- 0.1 dB
Distortion.....< 0.05 %
Audio output level, adjustable .....Unity, +/- 6 dBm
Maximum input & output level, 600 Ohm termination.....+18 dBm
Audio output impedance, balanced .....50 Ohms
Audio input impedance, balanced (selectable).....600 Ohms or High
Power dissipation .....< 25 Watts, per unit
AC operation .....110 or 220VC
Operating temperature .....0 to +50 °C

ORDERING INFORMATION

Fiber Optic Audio Multiplexer, Multimode (SIN 58-6)

DAM-4000-FTX-2 40 Channel, 24 Bit Audio Fiber Optic Transmitter Multiplexer; exceeds RS-250C Short-haul specs. with 1310nm Multimode LED -14 dBm with ST connector. (Requires -XLRINPUTXLR Input Interface Panel) (May require -RMD, -BLANK, -WALL)

DAM-4000-FRX-2 40 Channel, 24 Bit Audio Fiber Optic Receiver Multiplexer; exceeds RS-250C Short-haul specs, Multimode PIN with ST connectors, Sensitivity -24 dBm. (Requires -XLRINPUTXLR Input Interface Panel) (May require -RMD, -BLANK, -WALL)

Fiber Optic Audio Multiplexer, Singlemode

DAM-4000-FTX-50 40 Channel, 24 Bit Audio Fiber Optic Transmitter Multiplexer; exceeds RS-250C Short-haul specs. with 1310nm Singlemode Laser -8 dBm with FC connector (Requires -XLRINPUT XLR Input Interface Panel) (May require -RMD, -BLANK, - WALL)

DAM-4000-FTX-52 40 Channel, 24 Bit Audio Fiber Optic Transmitter Multiplexer; exceeds RS-250C Short-haul specs. with 1310nm Singlemode Laser -3 dBm with FC connector (Requires -XLRINPUT XLR Input Interface Panel) (May require -RMD, -BLANK, - WALL)

DAM-4000-FTX-53 40 Channel, 24 Bit Audio Fiber Optic Transmitter Multiplexer; exceeds RS-250C Short-haul specs. with 1310nm Singlemode Laser +0 dBm with FC connector (Requires -XLRINPUT XLR Input Interface Panel) (May require -RMD, -BLANK, - WALL)

DAM-4000-FTX-6 40 Channel, 24 Bit Audio Fiber Optic Transmitter Multiplexer; exceeds RS-250C Short-haul specs. with 1550nm Singlemode Laser +0 dBm with FC connector (Requires -XLRINPUT XLR Input Interface Panel) (May require WDM-95, -RMD, -BLANK, -WALL)

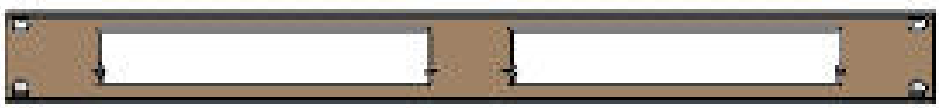
DAM-4000-FTX-7-xxxx 40 Channel, 24 Bit Audio Fiber Optic Transmitter Multiplexer; exceeds RS-250C Short-haul specs. with CWDM 1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm Single-mode Laser 0 dBm, SC connector.. Supports up to 16 wavelengths or channels per fiber optic cable. (Requires -XLRINPUT XLR Input Interface Panel) (May requires CWDM Mux & Demux Accessories) (May require -RMD, -BLANK, -WALL)

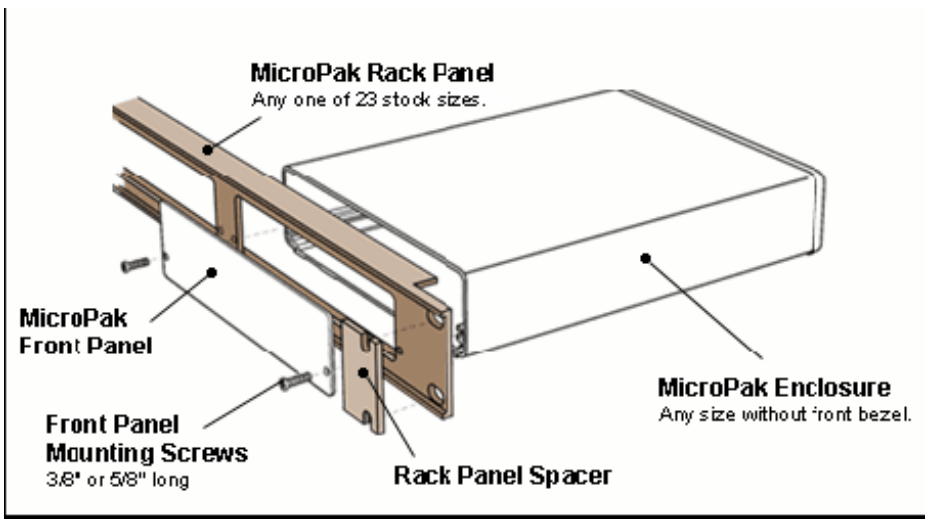
DAM-4000-FRX-50 40 Channel, 24 Bit Audio Fiber Optic Receiver Multiplexer; exceeds RS-250C Short-haul specs, Singlemode PIN with FCconnectors, Sensitivity -25 dBm. (Requires -XLROUTPUT XLR Output Interface Panel) (May require -RMD, -BLANK, -WALL)

Accessories

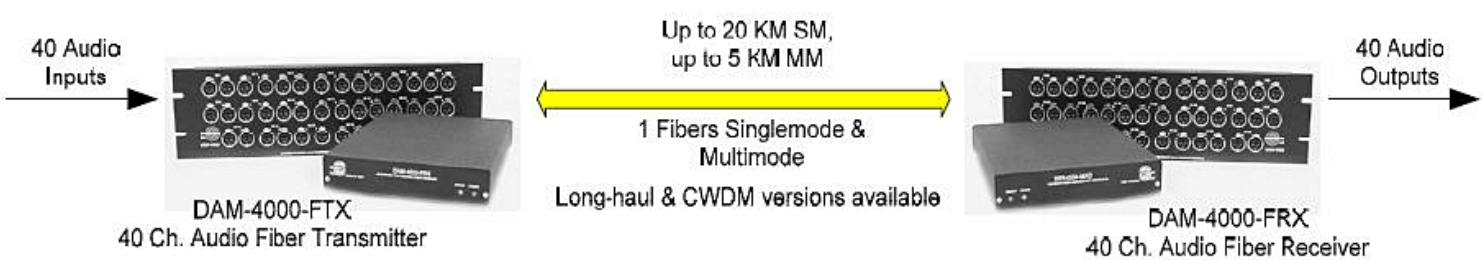
-**RMD** Dual Rack-mount Kit (1 kit)
-**BLANK** Blank panel for rack-mounting kit
-**WALL** Wall-mount Kit (1 set)
-**XLRINPUT** XLR Input Interface Panel with 40 input XLR connectors with Line level inputs; includes interface cables to DVM-4000
-**XLROUTPUT** XLR Output Interface Panel with 40 output XLR connectors; includes interface cables to DVM-4000

Dual Rack-mounting Kit, -RMD

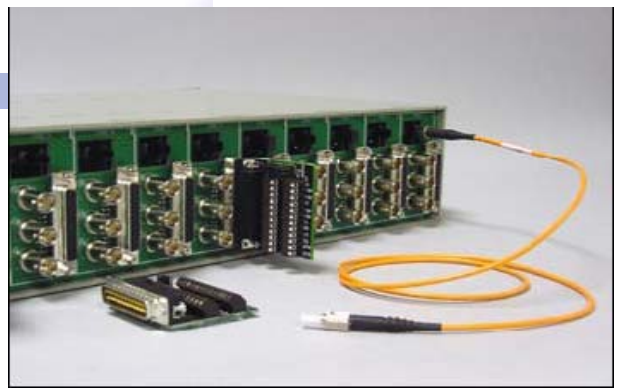




Application Diagram for DAM4000 40 Ch Audio Fiber Optic Transport System



8 Two-Wire, Digital, Telephone Fiber Optic Multiplexer



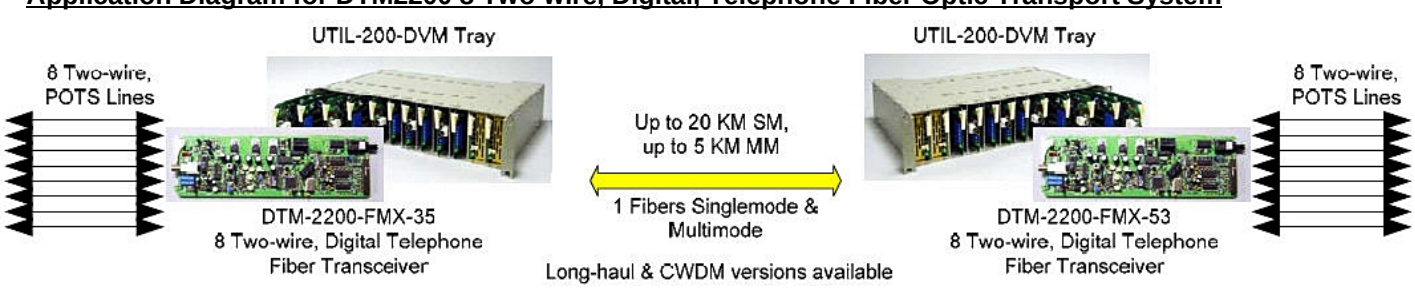
SUMMARY

- Supports 8 two-wire telephone line
- Ringing subscriber line interface circuits (RSLIC)
- Supports analog Plain Old Telephone Service (POTS)
- Modular configurations with all optical wavelengths, **LED Multimode** and **Laser Single-mode.**
- **Coarse Wave-division Multiplexing (CWDM)** systems are available for up to **16 wavelengths** over ***ONE* optical fiber**.
- **Optical budget** of up to **30 dB** for Single-mode.
- Universal AC operation for **85-265 VAC** and Telco DC operation for **48 VDC**.
- **Now support analog video, analog audio, serial digital video and digital audio in the same tray.** The UTIL-200-DVM Tray supports the DVM-2200 Video, 6 Audio and 3 Data Transport Cards, the DTV-220/230 SDI Transport Cards, the DTV-201/210F SDI Fan-out and Reclocking Cards, the DAM-2200 6 Audio and 3 Data Transport Cards and the AES-2200 6 AES/EBU and 3 Data Transport Cards.
- Applications include links from **studio to transmitter (STL)**, **studio to studio**, **studio to CATV head-end**, **common carrier**, **RBOC Telco circuits**, distance learning, **Intelligent Transportation Systems** & back-haul feeds from special events.

DESCRIPTION

The **DTM-2200** is the ideal solution for sending up to 8 telephone lines over fiber optic cable. The system supports ringing subscriber line interface circuits (RSLIC). The DTM-2200 also supports analog Plain Old Telephone Service (POTS).
This card configuration is designed to fit in our UTIL-200-DVM Tray along with other fiber modules for SDI (DTV220/225 series) and composite video and audio (DVM-2200 series) allowing multiple functions in one card cage. CWDM modules allow multiple DTM-2200 outputs to be combined on to a single strand of fiber.

Application Diagram for DTM2200 8 Two-wire, Digital, Telephone Fiber Optic Transport System


UTIL-200-DVM Tray
8 Two-wire, POTS Lines
DTM-2200-FMX-35
8 Two-wire, Digital Telephone Fiber Transceiver
Up to 20 KM SM, up to 5 KM MM
1 Fibers Singlemode & Multimode
Long-haul & CWDM versions available
UTIL-200-DVM Tray
DTM-2200-FMX-53
8 Two-wire, Digital Telephone Fiber Transceiver
8 Two-wire, POTS Lines

SPECIFICATIONS

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
RINGING PARAMETERS					
VRS Input Impedance (Note 3)		450	-	-	kΩ
Differential Ringing Gain (Note 4)	Balanced Ringing, VRS to 2-Wire, RLOAD= ∞	78	80	82	V/V
	Unbalanced Ringing, VRS to 2-Wire, RLOAD= ∞		40		V/V
Centering Voltage Accuracy	Tip, Referenced to VBH/2 + 0.5 (Note 9)	-	± 2.5	-	V
	Ring, Referenced to VBH/2 + 0.5	-	± 2.5	-	V
Open Circuit Ringing Voltage	Balanced Ringing, VRS Input = 0.840VRMS	-	67	-	VRMS
	Unbalanced Ringing, VRS Input = 0.840VRMS		33.5		VRMS
Ringing Voltage Total Distortion	RL= 1.3 kΩ, VT-R= |VBH| -5	-	-	3.0	%
4-Wire to 2-Wire Ringing Off Isolation	Active Mode, Referenced to VRS Input	-	90	-	dB
2-Wire to 4-Wire Transmit Isolation	Ringing Mode Referenced to the Differential Ringing Amplitude	-	80	-	dB
AC TRANSMISSION PARAMETERS					
Receive Input Impedance (Note 3)		160	-	-	kΩ
Transmit Output Impedance (Note 3)		-	-	1	Ω
4-Wire Port Overload Level	THD = 1%	3.1	3.5	-	VPK
2-Wire Port Overload Level	THD = 1%	3.1	3.5	-	VPK
2-Wire Return Loss	300Hz	-	24	-	dB
	1kHz	-	40	-	dB
	3.4kHz	-	21	-	dB
PARAMETER	**TEST CONDITIONS**	**MIN**	**TYP**	**MAX**	**UNITS**
2-Wire Longitudinal Balance (Notes 5, 6)	Forward Active, Grade A and B	58	62	-	dB
	Forward Active, Grade C, D and E	53	59	-	dB
4-Wire Longitudinal Balance (Notes 5, 6)	Forward Active, Grade A and B	58	67	-1	dB
	Forward Active, Grade C, D and E	53	64	-	dB
2-Wire to 4-Wire Level Linearity 4-Wire to 2-Wire Level Linearity Referenced to -10dBm	+3 to -40dBm, 1kHz	-	±0.025	-	dB
	-40 to -50dBm, 1kHz	-	±0.050	-	dB
	-50 to -55dBm, 1kHz	-	±0.100	-	dB
Longitudinal Current Capability Per Wire (Note 3)	Test for False Detect	20	-	-	mARMS
	Test for False Detect, Low Power Standby	10	-	-	mARMS
4-Wire to 2-Wire Insertion Loss		-0.20	0.00	+0.20	dB
2-Wire to 4-Wire Insertion Loss		-6.22	-6.02	-5.82	dB
4-Wire to 4-Wire Insertion Loss		-6.22	-6.02	-5.82	dB
Forward Active Idle Channel Noise (Note 6)	2-Wire C-Message, T = 25°C	-	10	13	dBrnC
	4-Wire C-Message, T = 25°C	-	4	7	dBrnC
Reverse Active Idle Channel Noise (Note 6)	2-Wire C-Message, T = 25°C	-	11	14	dBrnC
	4-Wire C-Message, T = 25°C	-	5	8	dBrnC
DC PARAMETERS					
Off Hook Loop Current Limit	Programming Accuracy	-8.5	-	+8.5	%
	Programming Range	15	-	45	mA
Off Hook Transient Current Limit	Programming Accuracy	-10	-	+10	%
	Programming Range	40	-	100	mA
Loop Current During Low Power Standby	Forward Polarity Only	18	-	26	mA
Open Circuit Voltage (|Tip - Ring|)	VBL= -16V	-	8.0	-	VDC
	VBL= -24V	14	15.5	17	VDC
	VBH> -60V	43	49	-	VDC
Low Power Standby, Open Circuit Voltage (Tip - Ring)	VBL= -48V	-	44.5	-	VDC
	VBH> -60V	43	51.5	-	VDC
Absolute Open Circuit Voltage	VRG in LPS and FA; VTG in RA; VBH> -60V	-	-53	-56	VDC
TEST ACCESS FUNCTIONS					
Switch On Voltage	IOL= 45mA	-	0.30	0.60	V
Loopback Max Battery		-	-	52	V
LOOP DETECTORS AND SUPERVISORY FUNCTIONS					
Switch Hook Programming Range		5	-	15	mA
Switch Hook Programming Accuracy	Assumes 1% External Programming Resistor	-10	-	+10	%
Dial Pulse Distortion		-	1.0	-	%
Ring Trip Comparator Threshold		2.3	2.5	2.9	V
Ring Trip Programming Current Accuracy		-10	-	+10	%
Ground Key Threshold		-	12	-	mA
E0 Transition, DET Output Delay		-	20	-	µs
Thermal Alarm Output	IC Junction Temperature	-	175	-	°C
Power dissipation					<15 Watts, per unit
AC operation					85 to 265 VAC
Operating temperature					0 to +50 °C

Specifications subject to change without notice.

ORDERING INFORMATION

	Fiber Optics, Broadcast Multiplexers, 8 Two-wire Telephone Line Transceiver, Modular, Singlemode: (SIN 58-6)
DTM-2200-FMX-3/5	Digital, Telephone Fiber Optic Transceiver, 1310/1550nm, Singlemode, 8 two-wire Telephone Lines
DTM-2200-FMX-5/3	Digital, Telephone Fiber Optic Transceiver, 1550/1310nm, Singlemode, 8 two-wire Telephone Lines
	Modular Utility Trays and Power Supplies & Accessories (SIN 58-6)
UTIL-200-DVM-2RU-AC	Analog, Digital and Fiber, up to 10 Slots, 2RU, Modular Utility Tray, with one 85-265 VAC Power Supply & Line Cord. Supports the DVM-2200 & DTV-220/230 SDI cards.
PS-200-DVM-AC	Modular 85-265 VAC Power Supply & Line Cord for 200 series trays
UTIL-200-DVM-2RU-48VDC	Analog, Digital and Fiber, up to 10 Slots, 2 RU, Modular Utility Tray, with one 36-60 VDC Power Supply. Supports the DVM-2200 & DTV-220/230 SDI cards. (Delivery 10 Weeks)
PS-200-DVM-48VDC	Modular 36-60 VDC Power Supply for 200 series trays (Delivery 10 Weeks)
-DTMPOT22	Phone screw terminal break-out adapter for DTM2200

1 Ch 9 Bit Video, 2 Ch 24 Bit Audio & 3 Ch Data Fiber Optic Multiplexer

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SUMMARY

The DVM-1000 SERIES is designed for applications that demand professional quality video (9 bit), audio (24 bit) and data transmission over fiber. Applications include links from studio to transmitter (STL), studio to studio, studio to CATV head-end, common carrier, RBOC Telco circuits, distance learning, Intelligent Transportation Systems & back-haul feeds from special events.
This series supports NTSC, PAL, SECAM as well as video with diplexed audio carriers at 4.5MHz, 5.8 MHz and 6.4 MHz. The design features differential video and audio inputs that greatly reduce hum and noise.
The DVM-1000 is a compact unit designed for stand alone, wall mount or rack-mount applications.

•Supports 1 video, 2 audio and 3 RS-232 simplex data channels
•All digital processing.
•Video bandwidth 8 MHz with 64dB S/N;Signal to Quantizing Noise ratio of 64 dB, audio 20Hz to 20KHz with 90dB S/N.
•Video gain and 1000 ft cable equalization adjustments for input & output.
•Singlemode or multimode configurations.
•Differential Gain and Phase of 2% and 1°, respectively.

SPECIFICATIONS

Video Performance

Signal to noise .....> 64 dB
Differential gain.....< +/- 2 %
Differential phase.....< +/- 1 ☐
Chrominance to luminance gain.....< +/- 2%
Chrominance to luminance delay.....< +/- 30 nsec.
Frequency response to 6 MHz.....< +/- 1 dB
3 dB Bandwidth.....8 MHz
Luminance non-linearity.....< 2 %
Ringing .....< +/- 2 %
Tilt.....< +/- 0.5 %
Video output & input impedance .....75 Ohms
Delay, throughput.....1.24 micro sec.
Data channels.....3 RS-232C@ 9600 Baud

Audio Performance

Signal to noise..... > 90 dB
Frequency response to **20 Hz to 20 KHz**..... < +/- 0.1 dB
Distortion..... < 0.05 %
Audio output level, adjustable..... Unity, +/- 6 dBm
Maximum input & output level, 600 Ohm..... +18 dBm
Audio output impedance, balanced ..... 50 Ohms
Audio input impedance, balanced (selectable) ..... 600 Ohms or High
Power dissipation ..... < 15 Watts, per unit
AC operation ..... 110 or 220VAC (opt
Operating temperature ..... 0 to +50 ☐C
Storage temperature..... -40 to +95 ☐C
Portable and Wall-mount:..... 7" L x 5 ¾" W x 1 ¾"
Triple Rack-mount Kit for 3 modules:.....7" L x 19" W x 1 ¾"

ORDERING INFORMATION

Fiber Optics, Professional Multiplexers, 9 Bit Video, 24 Bit Audio and Data, Stand-alone, Multimode: (SIN 58-6)

DVM-1000-FTX-2
9 bit Video, 2 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Transmitter with 1310nm Multimode LED -14 dBm with ST connector. (May require -DVMAUDIO20, -DVMXLR20, -RMT, -BLANK and -WALL)

DVM-1000-FRX-2
9 bit Video, 2 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Receiver, Multimode PIN with ST connectors, Sensitivity -24 dBm. (May require –DVMAUDIO20, -DVMXLR20, -RMT, -BLANK and -WALL)

Fiber Optics, Professional Multiplexers, 9 Bit Video, 24 Bit Audio and Data, Stand-alone, Singlemode: (SIN 58-6)

DVM-1000-FTX-50
9 bit Video, 2 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Transmitter with 1310nm Single-mode Laser **-8 dBm** with FC connector (May require -DVMAUDIO20, -DVMXLR20, -RMT, -BLANK and -WALL)

DVM-1000-FTX-52
9 bit Video, 2 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Transmitter with 1310nm Single-mode Laser **-3 dBm** with FC connecto (May require -DVMAUDIO20, -DVMXLR20, -RMT, -BLANK and -WALL)

DVM-1000-FTX-53
9 bit Video, 2 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Transmitter with 1310nm Single-mode Laser **+0 dBm** with FC connecto (May require -DVMAUDIO20, -DVMXLR20, -RMT, -BLANK and -WALL)

DVM-1000-FTX-6
9 bit Video, 2 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Transmitter with 1550nm Single-mode Laser **+0 dBm** with FC connecto (May require -DVMAUDIO20, -DVMXLR20, -RMT, -BLANK and -WALL)

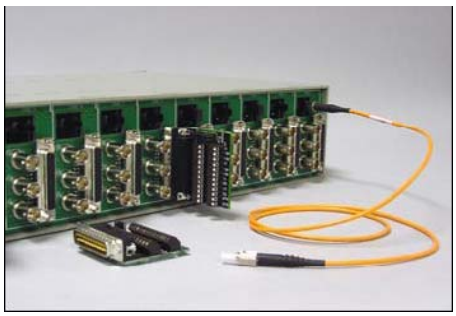
DVM-1000-FTX-7-xxxx
9 bit Video, 2 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Transmitter with CWDM 1270, 1290, 1310, 1330, 1350, 1370, 1390, 14 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm Single-mode Laser –0 dBm with SC connector. Supports up to 8 wavelengths or chann per fiber optic cable. (Enter wavelength for xxxx) (May require -DVMAUDIO20, -DVMXLR20, -RMT, -BLANK and -WALL) (May requires CWDM Mux & Dem Accessories)

DVM-1000-FRX-50
9 bit Video, 2 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Receiver, Singlemode PIN with FC connectors, Sensitivity -28 dBm. (M require -DVMAUDIO20, -DVMXLR20, -RMT, -BLANK and -WALL)

Accessories (SIN 58-6)

-RMT Triple Rack-mount Kit (1 kit)
-BLANK Blank panel for rack-mounting kit
-WALL Wall-mount Kit (1 set)
-DVMAUDIO20 Audio screw terminal break-out adapter for DVM1000
-DVMXLR20 XLR Audio Adapter Cable for DVM1000
-NOAUDIO No Audio Option, price adjustment for units without the 2 audio channels (subtract $200 per transmitter or receiver)

1 Ch 9 Bit Video, 2 Ch 24 Bit Audio & 3 Ch Data Fiber Optic Multiplexer



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COMPATIBLE WITH: UTIL-200-DVM

SUMMARY

-Supports 1 video, 2 audio and 3 RS-232 simplex data channels

-Video bandwidth 8 MHz with 64dB S/N; audio 20Hz to 20KHz with 90dB S/N.

-Video gain and 1000 ft cable equalization adjustments for input & output.

-Singlemode or multimode configurations.

-9 Bit Video with a Signal to Noise ratio greater than 64 dB and a Signal to Quantizing Noise ratio of 64 dB.

-Differential Gain and Phase of 2% and 1°, respectively.

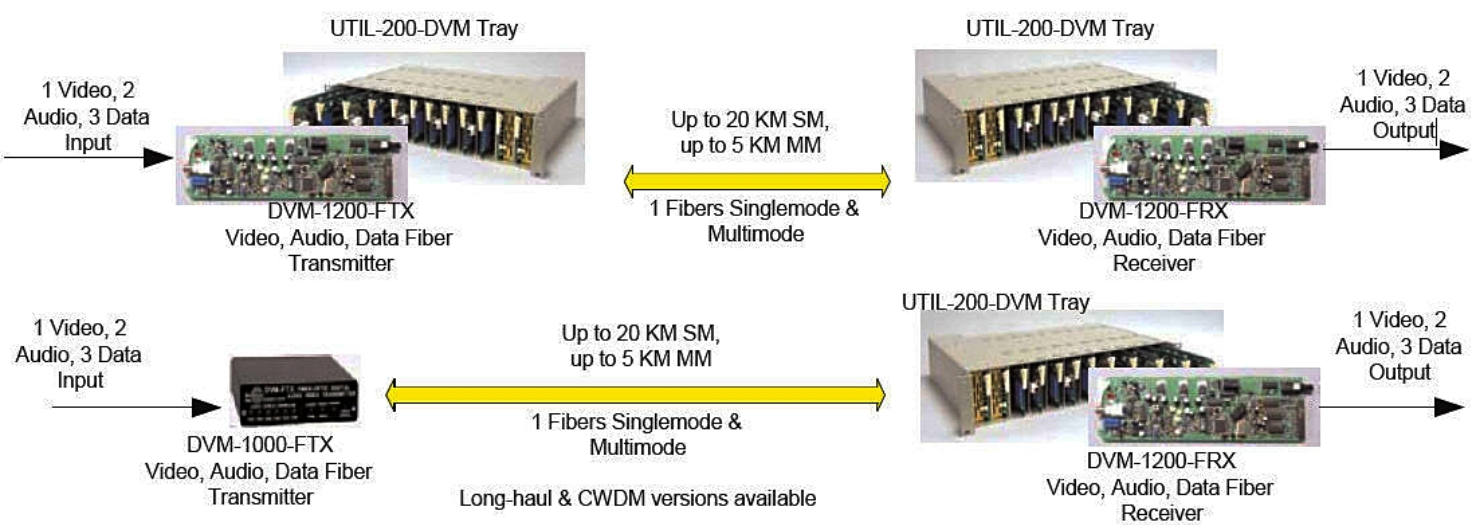
-Video, Audio and Optical front panel status indicators with dry alarm relay contacts.

-Available in portable, rack-mount and modular configurations with all optical wavelengths, LED Multimode and Laser Single-mode.

-Support analog video, analog audio, serial digital video and digital audio in the same tray.

The DVM-1200 series is designed for applications that demand high quality video (9 bit), audio (24 bit) and data transmission over fiber. Applications include links from studio to transmitter (STL), studio to studio, studio to CATV head-end, common carrier, RBOC Telco circuits, distance learning, Intelligent Transportation Systems & back-haul feeds from special events. This series supports NTSC, PAL, SECAM as well as video with diplexed audio carriersat 4.5MHz, 5.8 MHz and 6.4 MHz (Option for 10 MHz). The design features differential video and audio inputs that greatly reduce hum and noise.

The DVM-1000 is a compact unit designed for stand alone, wall mount or rack-mount applications, while the DVM-1200 modular card plugs into one of our UTIL-200-DVM series card trays for high density rack mounting. The UTIL-200-DVM card tray can also accommodate cards for other formats such as SDI, analog/AES digital audio and reclocking for maximum flexibility. Advanced CWDM technology is available which enables up to 8 units to be put on one strand of fiber.


UTIL-200-DVM Tray
1 Video, 2 Audio, 3 Data Input
DVM-1200-FTX
Video, Audio, Data Fiber Transmitter
Up to 20 KM SM, up to 5 KM MM
1 Fibers Singlemode & Multimode
UTIL-200-DVM Tray
1 Video, 2 Audio, 3 Data Output
DVM-1200-FRX
Video, Audio, Data Fiber Receiver
1 Video, 2 Audio, 3 Data Input
DVM-1000-FTX
Video, Audio, Data Fiber Transmitter
Up to 20 KM SM, up to 5 KM MM
1 Fibers Singlemode & Multimode
Long-haul & CWDM versions available
UTIL-200-DVM Tray
1 Video, 2 Audio, 3 Data Output
DVM-1200-FRX
Video, Audio, Data Fiber Receiver

SPECIFICATIONS

Video Performance

Signal to noise ..... > 64 dB
Differential gain.....< +/- 2 %
Differential phase.....< +/- 1 ☐
Chrominance to luminance gain.....< +/- 2%
Chrominance to luminance delay.....< +/- 30 nsec.
Frequency response to 6 MHz.....< +/- 1 dB
3 dB Bandwidth..... 8 MHz
Luminance non-linearity.....< 2 %
Ringing .....< +/- 2 %
Tilt.....< +/- 0.5 %
Video output & input impedance .....75 Ohms
Delay, throughput.....1.24 micro sec.
Data channels.....3 RS-232C@ 9600 Baud

Audio Performance

Signal to noise.....> 90 dB
Frequency response to **20 Hz to 20 KHz**..... < +/- 0.1 dB
Distortion.....< 0.05 %
Audio output level, adjustable.....Unity, +/- 6 dBm
Maximum input & output level, 600 Ohm..... +18 dBm
Audio output impedance, balanced ..... 50 Ohms
Audio input impedance, balanced (selectable) ....600 Ohms or High
Power dissipation .....< 15 Watts, per unit
AC operation .....110 or 220VAC (opt
Operating temperature ..... 0 to +50 ☐C
Storage temperature..... -40 to +95 ☐C
Portable and Wall-mount:..... 7" L x 5 ¾" W x 1 ¾"
Triple Rack-mount Kit for 3 modules:……7" L x 19" W x 1 ¾" H

ORDERING INFORMATION

Fiber Optics, Professional Multiplexers, 9 Bit Video, 24 Bit Audio and Data, Modular, Multimode: (SIN 58-6)

DVM-1200-FTX-2	Modular, 9 bit Video, 2 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Transmitter with 1310nm Multimode LED -14 dBm with ST connector for the UTIL-200-DVM Tray. (Optional -DVMAUDIO22, -DVMXLR22,)
DVM-1200-FRX-2	Modular, 9 bit Video, 2 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Receiver; exceeds RS-250C Short-haul specs, Multimode PIN with ST connectors, Sensitivity -24 dBm for the UTIL-200-DVM Tray. (Optional -DVMAUDIO22, -DVMXLR22)

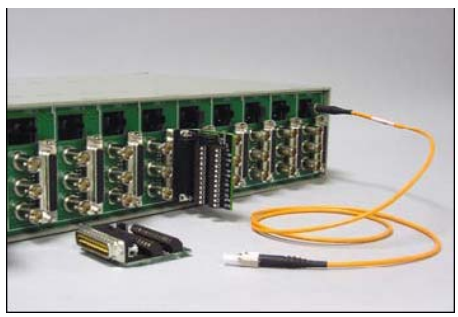
Fiber Optics, Professional Multiplexers, 9 Bit Video, 24 Bit Audio and Data, Modular, Singlemode:

DVM-1200-FTX-50	Modular, 9 bit Video, 2 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Transmitter with 1310nm Single-mode Laser **-8 dBm** with FC connector for the UTIL-200-DVM Tray. (Optional -DVMAUDIO22, -DVMXLR22,)
DVM-1200-FTX-52	Modular, 9 bit Video, 2 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Transmitter with 1310nm Single-mode Laser **-3 dBm** with FC connector (Optional -DVMAUDIO22, -DVMXLR22,)
DVM-1200-FTX-53	Modular, 9 bit Video, 2 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Transmitter with 1310nm Single-mode Laser **+0 dBm** with FC connector (Optional -DVMAUDIO22, -DVMXLR22,)
DVM-1200-FTX-6	Modular, 9 bit Video, 2 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Transmitter with 1550nm Single-mode Laser **+0 dBm** with FC connector (Optional -DVMAUDIO22, -DVMXLR22, WDM-95,)
DVM-1200-FTX-7-xxxx	Modular, 9 bit Video, 2 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Transmitter with CWDM 1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm Single-mode Laser 0 dBm with SC connector. Supports up to 8 wavelength or channels per fiber optic cable. (Enter wavelength for xxxx) (Optional -DVMAUDIO22, -DVMXLR22,) (May requires CWDM Mux & Demux Accessories)
DVM-1200-FRX-50	Modular, 9 bit Video, 2 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Receiver Singlemode PIN with FC connectors, Sensitivity -25 dBm for the UTIL-200-DVM Tray. (Optional -DVMAUDIO22, -DVMXLR22,)

Modular Utility Trays and Power Supplies & Accessories (SIN 58-6)

UTIL-200-DVM-2RU-AC	Analog, Digital and Fiber, up to 10 Slots, 2RU, Modular Utility Tray, with one 85-265 VAC Power Supply & Line Cord. **Supports the DVM-1200 & DTV-220/230 SDI cards.**
PS-200-DVM-AC	Modular 85-265 VAC Power Supply & Line Cord for 200 series trays
-DVMAUDIO22	Audio screw terminal break-out adapter for DVM1200
-DVMXLR22	XLR Audio Adapter Cable for DVM1200

1 Ch. 9 Bit Video, 2 Bi-dir Audio & 8 Bi-dir Data Fiber Optic Multiplexer for Surveillance and Transportation



SUMMARY

- Exceeds RS-250C Medium-haul and Professional Video specifications.
- **9 Bit Video** with a **Signal to Noise** ratio greater than **64 dB** and a **Signal to Quantizing Noise ratio of 64 dB.**
- Video Bandwidth of 8 MHz for support of NTSC, PAL and SECAM (Option for 10 MHz).
- Differential Gain and Phase of 2 % and 1°, respectively.
- Video Gain and up to 3000 feet cable equalization or sharpness control.
- **24 bit, Bi-directional Audio** flat from 20 to 20K Hz, S/N greater than 90 dB and THD less than 0.05%.
- Supports up to 8 bi-directional, full duplex, data channels of RS-232C, RS-422, RS-485, CMOS or TTL at up to 115.2 Kbps. The data interface protocol is dipswitch configurable in banks of 4 channels. For example you can have 4 RS232 and 4 RS422 channels or 8 RS232 channels.
- **Data Squelching Circuit**. With the loss of link integrity or fiber disconnection, the data I/O's will not stream.
- Video, Audio and Optical front panel status indicators.
- Optical budget of up to 24 dB.
- Supports **1 video, 2 duplex audio** and up to **8 bi-directional data channels** over ONE optical fiber.
- AC operation for 110/220 VAC and optionally for 48 VDC.
- Available in portable, rack-mount and modular configurations with all optical wavelengths.
- Applications include distance learning, Intelligent Transportation Systems and surveillance.
- Temperature range -40° to +75°C.

SPECIFICATIONS

Exceeds the RS-250C Short-haul and Broadcast specification.
Specifications subject to change without notice. Designed and manufactured in the U. S. A.

Video Input	1 Vp-p
Signal to noise	> 75 dB
Differential gain	< +/- 2 %
Differential phase	< +/- 1 °
Chrominance to luminance gain	< +/- 1 %
Chrominance to luminance delay	< +/- 15 nsec.
Frequency response to 6 MHz	< +/- 0.5 dB
3 dB Bandwidth	8 MHz
Luminance non-linearity	< 1 %
Ringing	< +/- 1 %
Tilt	< +/- 1 %
Video output & input impedance	75 Ohms
Differential video input option	120 Ohms, part # -DIFFIN
Cable Equalizer, optional (3000 feet)	>30 dB @ 10 MHz
Portable and Wall-mount	7" L x 5 ¾" W x 1 ¾" H
Triple Rack-mount Kit for 3 modules (Part number -RMT)	7" L x 19" W x 1 ¾" H
UTIL-200-DVM 10 Slot Tray	13 ¾" L x 19" W x 3 ½" H

Data Channel Protocol (selectable in banks of 4 ch.)	RS-232C, RS-422 or RS-485 Data
Data Configuration (RS422 mode supports RS485)	Data Channels 0 & 1=RS422 I/O, 2 & 3=RS232 I/O; No termination. Data Ch 0, 1 & 2=RS422 I/O, 3=RS422 In & RS232 Out; RS422 Termination ON. Data Channels 0 thru 3=RS232 I/O; No termination.

Data Rate	DC to 115.2 Kbps
Data and Audio I/O's	44 pins D-Type Connector, Optional screw terminal adapter
Bit Error Rate	< 1x10-9
Power dissipation	< 15 Watts, per unit
AC operation	110 or 220 VAC (optional 48VDC)
Operating temperature	-40° to +75°C
Operating Humidity	0-95% non-condensing
Wavelength	1310/1550nm
Output Power, minimum	0 dBm Singlemode
Receiver Sensitivity	-24 dBm Singlemode
Optical Loss Budget, minimum	24 dBm Singlemode

ORDERING INFORMATION

Fiber Optics, Surveillance & Transportation Video, Voice and Data Multiplexers, Stand-alone, Multimode: (SIN 58-6)

DVM-1300-FTX-38-ST Standalone, 9 bit Video Fiber Optic Transmitter; exceeds RS-250C Short-haul specs, with up to 8 optional bi-directional Data Channels, Supports RS-232, RS-422 and RS-485 jumper selectable, with 1310nm Multimode Laser 0 dBm and 850nm PIN with FC or ST connector, Sensitivity -24 dBm. Wall-mount 110 or 220VAC power supply included. Specify –ST or –FC for connector type (May require -DVMAUDIO30, -4DATA, -8DATA, -VOICE, -RMT, -BLANK and -WALL)

DVM-1300-FRX-83-ST Standalone, 9 bit Video, Fiber Optic Receiver; exceeds RS-250C Short-haul specs, with up to 8 optional bi-directional Data Channels, Supports RS-232, RS-422 and RS-485 jumper selectable, 850nm Multimode Laser 0 dBm and 1310nm PIN with FC or ST connectors, Sensitivity -24 dBm. Wall-mount 110 or 220VAC power supply included. Specify –ST or –FC for connector type (May require -DVMAUDIO30, -4DATA, -8DATA, -VOICE, -RMT, -BLANK and -WALL)

Fiber Optics, Surveillance & Transportation Video, Voice and Data Multiplexers, Modular, Multimode: (SIN 58-6)

DVM-1300-FTX-MOD-38-ST Modular, 9 bit Video Fiber Optic Transmitter; exceeds RS-250C Short-haul specs, with up to 8 optional bi-directional Data Channels, Supports RS-232, RS-422 and RS-485 jumper selectable, with 1310nm Multimode Laser 0 dBm and 850nm PIN with FC or ST connector, Sensitivity -24 dBm. For UTIL-200-DVM-2RU-AC Tray. Specify –ST or –FC for connector type (May require -DVMAUDIO30, -4DATA, -8DATA, -VOICE)

DVM-1300-FRX-MOD-83-ST Modular, 9 bit Video, Fiber Optic Receiver; exceeds RS-250C Short-haul specs, with up to 8 optional bi-directional Data Channels, Supports RS-232, RS-422 and RS-485 jumper selectable, 850nm Multimode Laser 0 dBm and 1310nm PIN with FC or ST connectors, Sensitivity -24 dBm. For UTIL-200-DVM-2RU-AC Tray.Specify –ST or –FC for connector type (May require -DVMAUDIO30, -4DATA, -8DATA, -VOICE, -RMT, -BLANK and -WALL)

Fiber Optics, Surveillance & Transportation Video, Voice and Data Multiplexers, Stand-alone, Singlemode: (SIN 58-6)

DVM-1300-FTX-35-ST Standalone, 9 bit Video Fiber Optic Transmitter; exceeds RS-250C Short-haul specs, **with up to 8 optional bi-directional Data Channels,** Supports RS-232, RS-422 and RS-485 jumper selectable, with 1310nm Single-mode Laser 0 dBm and 1550nm PIN with FC or ST connector, Sensitivity -24 dBm. Wall-mount 110 or 220VAC power supply included. Specify –ST or –FC for connector type (May require -DVMAUDIO30, -4DATA, -8DATA, -VOICE, -RMT, -BLANK and -WALL)

DVM-1300-FRX-53-ST Standalone, 9 bit Video, Fiber Optic Receiver; exceeds RS-250C Short-haul specs, **with up to 8 optional bi-directional Data Channels**, Supports RS-232, RS-422 and RS-485 jumper selectable, 1550nm Singlemode Laser 0 dBm and 1310nm PIN with FC or ST connectors, Sensitivity -24 dBm. Wall-mount 110 or 220VAC power supply included. Specify –ST or –FC for connector type (May require -DVMAUDIO30, -4DATA, -8DATA, -VOICE, -RMT, -BLANK and -WALL)

Fiber Optics, Surveillance & Transportation Video, Voice and Data Multiplexers, Modular, Singlemode: (SIN 58-6)

DVM-1300-FTX-MOD-35-ST Modular, 9 bit Video Fiber Optic Transmitter; exceeds RS-250C Short-haul specs, **with up to 8 optional bi-directional Data Channels,** Supports RS-232, RS-422 and RS-485 jumper selectable, with 1310nm Single-mode Laser 0 dBm and 1550nm PIN with FC or ST connector, Sensitivity -24 dBm. For UTIL-200-DVM-2RU-AC Tray. Specify –ST or –FC for connector type (May require -DVMAUDIO30, -4DATA, -8DATA, -VOICE)

DVM-1300-FRX-MOD-53-ST Modular, 9 bit Video, Fiber Optic Receiver; exceeds RS-250C Short-haul specs, **with up to 8 optional bi-directional Data Channels**, Supports RS-232, RS-422 and RS-485 jumper selectable, 1550nm Singlemode Laser 0 dBm and 1310nm PIN with FC or ST connectors, Sensitivity -24 dBm. For UTIL-200-DVM-2RU-AC Tray. Specify –ST or –FC for connector type (May require -DVMAUDIO30, -4DATA, -8DATA, -VOICE, -RMT, -BLANK and -WALL)

Options, Modular Utility Trays and Power Supplies (SIN 58-6)

-4DATA 4 bi-directional, Ful Duplex, Data Channels, Supports RS-232, RS-422 & RS-485 jumper selectable. (1) each for transmitter & receiver side.
-8DATA 8 bi-directional, Full Duplex, Data Channels, Supports RS-232, RS-422 & RS-485 jumper selectable. (1) each for transmitter & receiver side.
-VOICE 20-20KHz Digital Codec for Bi-directional Stereo Audio Ch., (1) each for transmitter and receiver side
-DIFFIN 120 Ohm Differential Video Input option
-RMT Triple Rack-mount Kit (1 kit)
-WALL Wall-mount Kit (1 set)
-BLANK Blank panel for rack-mounting kit
-DVMBREAK30 Audio and Dada screw terminal break-out adapter for DVM3000
UTIL-200-DVM-2RU-AC Analog, Digital and Fiber, 10 Slot, 2RU, Modular Utility Tray, with one 85-265 VAC Power Supply & Line Cord
PS-200-DVM-AC Modular 85-265 VAC Power Supply & Line Cord for 200 series trays
UTIL-200-DVM-2RU-48VDC Analog, Digital and Fiber, 10 Slot, 2 RU, Modular Utility Tray, with one 36-60 VDC Power Supply (Delivery 10 Weeks)
PS-200-DVM-48VDC Modular 36-60 VDC Power Supply for 200 series trays (Delivery 10 Weeks)

Bi-directional, 1Ch 9-bit Video, 2 Audio & 2 Data, Fiber Optic Multiplexer

COMPATIBLE WITH: -RMT,-BLANK,-WALL

SUMMARY

-Supports 1 video, 2 audio and 2 data channels with 1 tally dry contact closure Bi-directionally over ONE optical fiber.

-9 Bit Video with a Signal to Noise ratio greater than 62 dB and a Signal to Quantizing Noise ratio of 62 dB.

-Video Bandwidth of 8 MHz for support of NTSC, PAL, SECAM and video with diplexed audio carriers at 4.5 MHz, 5.8 MHz and 6.4 MHz (Option for 10 MHz).

-Differential Gain and Phase of less than 2% and 1°, respectively

-Differential video and audio inputs for superior Common-mode Hum and Noise rejection of greater than 60 dB.

-Video channel isolation greater than 90 dB using a Red Field test signal.

-24 Bit Audio flat from 20 to 20K Hz, S/N greater than 90 dB and THD less than 0.05%.

-Video and Optical front panel status indicators with dry alarm relay contacts.

-Optical budget of up to 24 dB for Single-mode.

-Available in portable and rack-mount configurations.

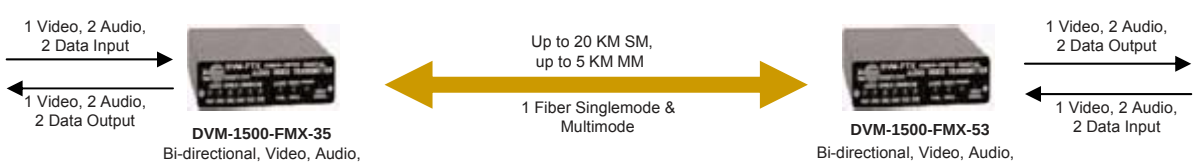
-Applications include links from studio to transmitter (STL), studio to studio, studio to CATV head-end, common carrier, teleconferencing, RBOC Telco circuits, distance learning, Intelligent Transportation Systems & back-haul feeds from special events.

-Front panel video output gain.

The DVM-1500 series is a compact standalone unit designed to provide bi-directional video, audio and data transmission over one strand of single mode fiber. It is ideally suited to applications such as teleconferencing, distance learning, STL and studio to studio links.

The DVM-1500 series supports NTSC, PAL, SECAM as well as video with diplexed audio carriers at 4.5MHz, 5.8 MHz and 6.4 MHz (Option for 10 MHz). The design features differential video and audio inputs which greatly reduce hum and noise.
Video and Optical front panel status indicators with dry alarm relay contacts.

APPLICATIONS



SPECIFICATIONS

Exceeds the RS-250C Short-haul specification.

Signal to noise	> 62 dB
Video channel isolation with Red Field	> 90 dB
Differential gain	< +/- 2 %
Differential phase	< +/- 1
Chrominance to luminance gain	< +/- 2 %
Chrominance to luminance delay	< +/- 30 nsec.
Frequency response to 6 MHz	< +/- 1 dB
3 dB Bandwidth	8 MHz
Luminance non-linearity	< 2%
Ringing	< +/- 2 %
Tilt	< +/- 0.5 %
Video output & input impedance	75 Ohms
Delay, throughput	1.24 micro sec.
Signal to noise	> 90 dB
Frequency response to 20 Hz to 20 KHz	< +/- 0.1 dB
Distortion	< 0.05 %
Audio output level, adjustable	Unity, +/- 6 dBm
Maximum input & output level, 600 Ohm termination	+18 dBm
Audio output impedance, balanced	50 Ohms
Audio input impedance, balanced (selectable)	600 Ohms or High
Data channels (at 9600 Baud)	2 RS-232C, RS422, RS485, TTL
Power dissipation	< 15 Watts, per unit
AC operation	110 or 220 VAC
Operating temperature	0 to +50 C
Portable and Wall-mount:	7" L x 5 ¾" W x 1 ¾" H
Triple Rack-mount Kit for 3 modules (Part number -RMT):	7" L x 19" W x 1 ¾" H

ORDERING INFORMATION

Bi-directional, 9 bit Video, Audio and Data Fiber Optic Multiplexer, Stand-alone, Multimode (SIN 58-6)

DVM-1500-FMX-38 1video 9 bits, 2 audio and 2 data channel with tally, Bi-directional, Fiber Optic, Transceiver with WDM for 1310nm Multimode Laser 0 dBm, 850nm Singlemode PIN, Sensitivity -24 dBm with FC, SC or ST connector. (Requires both -38 and – 83 versions for 1 link) (May require **- DVMAUDIO25, -RMT , -BLANK, -WALL**)

DVM-1500-FMX-83 1 video 9 bits, 2 audio and 2 data channel with tally, Bi-directional, Fiber Optic, Transceiver with WDM 850nm Multimode Laser 0 dBm and 1310 Singlemode PIN, Sensitivity -24 dBm with FC, SC or ST connector. (Requires both -38 and -83 versions for 1 link) (May require **- DVMAUDIO25, -RMT , -BLANK, -WALL**)

Bi-directional, 9 bits Video, Audio and Data Fiber Optic Multiplexer, Stand-alone, Singlemode (SIN 58-6)

DVM-1500-FMX-35 1video 9 bits, 2 audio and 2 data channel with tally, Bi-directional, Fiber Optic, Transceiver with WDM for 1310nm Single-mode Laser 0 dBm, 1550nm Singlemode PIN, Sensitivity -24 dBm with FC, SC or ST connector. (Requires both -35 and -53 versions for 1 link) (May require **-DVMAUDIO25, -RMT , -BLANK, -WALL**)

DVM-1500-FMX-53 1 video 9 bits, 2 audio and 2 data channel with tally, Bi-directional, Fiber Optic, Transceiver with WDM 1550nm Single-mode Laser 0 dBm and 1310 Singlemode PIN, Sensitivity -24 dBm with FC, SC or ST connector. (Requires both -35 and -53 versions for 1 link) (May require **- DVMAUDIO25, -RMT, -BLANK, -WALL**)

Accessories (SIN 58-6)

-RMT	Triple Rack-mount Kit (1 kit)
-BLANK	Blank panel for rack-mounting kit
-WALL	Wall-mount Kit (1 set)
-DVMAUDIO25	Audio screw terminal break-out adapter for DVM1500
-NOAUDIO	No Audio Option, price adjustment for units without the 2 audio channels

2 Ch 9-bit Video & 4 Audio Fiber Optic Multiplexer

COMPATIBLE WITH: UTIL-200-DVM

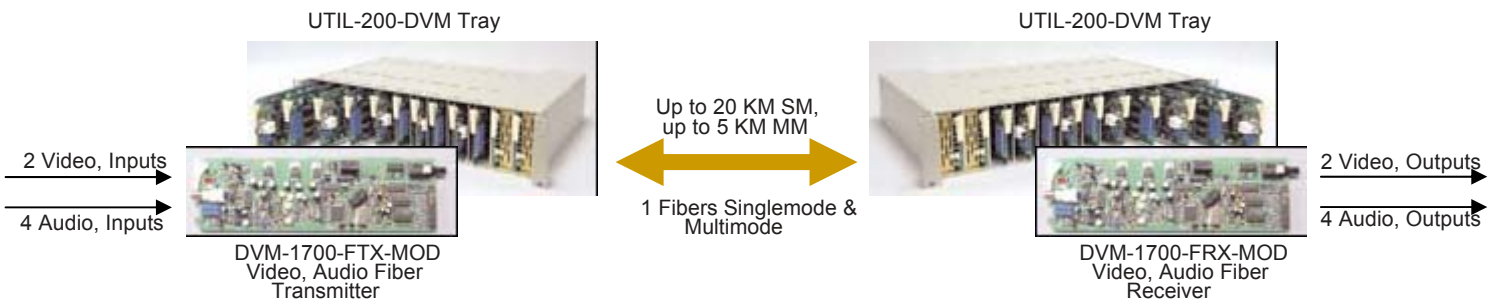
SUMMARY

- Supports 2 video and 4 audio channels on one strand of fiber.
- 9 Bit Video with a Signal to Noise ratio greater than 75 dB and a Signal to Quantizing Noise ratio of 64 dB.
- Video Bandwidth of 8 MHz for support of NTSC, PAL, SECAM and video with diplexed audio carriers at 4.5 MHz, 5.8 MHz and 6.4 MHz (Option for 10 MHz).
- Differential Gain and Phase of 2% and 1°, respectively.
- Differential video and audio inputs for superior Common-mode Hum and Noise rejection of greater than 60 dB.
- 24 Bit Audio flat from 20 to 20K Hz, S/N greater than 90 dB and THD less than 0.05%.
- Video, Audio and Optical front panel status indicators with dry alarm relay contacts.
- Coarse Wave-division Multiplexing (CWDM) systems are available for up to 8 wavelengths over ONE optical fiber.
- Optical budget of up to 28 dB for Single-mode.
- Supports 2 video channel and 8 audio channels over one optical fiber.
- Universal AC operation for 85-265 VAC and Telco DC operation for 48 VDC.
- Available in rack-mount configurations with all optical wavelengths, LED Multimode and Laser Single-mode.

The DVM-1700 is ideal for applications that require multiple video and audio to be transmitted over one fiber. Applications include back haul, studio to studio and STL. The all-digital processing, 9 bit video and 24 bit audio, provides superior performance charac- teristics. Advanced CWDM technology allows up to 8 lengths to be put on one strand of fiber.

The DVM-1700 series supports NTSC, PAL, SECAM as well as video with diplexed audio carriers at 4.5MHz, 5.8 MHz and 6.4 MHz (Option for 10 MHz). The design features differential video and audio inputs, which greatly reduce hum and noise.
Video and Optical front panel status indicators with dry alarm relay contacts.
A -RMT kit allows unit to be mounted in a standard 19" equipment rack.

APPLICATIONS



SPECIFICATIONS

Exceeds the RS-250C Short-haul specification.

Video Performance:

Signal to noise	> 64 dB
Differential gain	> 90 dB
Differential phase	< +/- 2 %
Chrominance to luminance gain	< +/- 1 ?
Chrominance to luminance delay	< +/- 2 %
Frequency response to 6 MHz	< +/- 30 nsec.
3 dB Bandwidth	< +/- 1 dB
Luminance non-linearity	8 MHz
Ringing	< 2%
Tilt	< +/- 2 %
Video output & input impedance	75 Ohms
Delay, throughput	1.24 micro sec.

Audio Performance:

Signal to noise	> 90 dB
Frequency response to 20 Hz to 20 KHz	< +/- 0.1 dB
Distortion	< 0.05 %
Audio output level, adjustable	Unity, +/- 6 dBm
Maximum input & output level, 600 Ohm termination	+18 dBm
Audio output impedance, balanced	50 Ohms
Audio input impedance, balanced (selectable)	600 Ohms or High
Data channels	3 RS-232C at 9600 Baud
Power dissipation	< 15 Watts, per unit
AC operation	110 or 220 VAC (optional 48VDC)
Operating temperature	0 to +50 C
Portable and Wall-mount:	7" L x 5 ¾" W x 1 ¾" H
Triple Rack-mount Kit for 3 modules (Part number -RMT):	7" L x 19" W x 1 ¾" H

ORDERING INFORMATION

Two Channel, 9 bit Video & Audio Fiber Optic Multiplexer, Modular, Multimode & Singlemode (SIN 58-6)

DVM-1700-FTX-MOD-50	Modular, 2 video 9 bit, 4 audio channels, Fiber Optic Transmitter with 1310nm Multimode & Singlemode Laser -8 dBm with FC connector. For UTIL-200-DVM-2RU-AC Tray. Specify -ST or -FC for connector type (May require - DVMAUDIO27)
DVM-1700-FTX-MOD-52	Modular, 2 video 9 bit, 4 audio channels, Fiber Optic Transmitter with 1310nm Multimode & Singlemode Laser -3 dBm with FC connector. For UTIL-200-DVM-2RU-AC Tray. Specify -ST or -FC for connector type (May require - DVMAUDIO27)
DVM-1700-FTX-MOD-53	Modular, 2 video 9 bit, 4 audio channels, Fiber Optic Transmitter with 1310nm Multimode & Singlemode Laser +0 dBm with FC connector. For UTIL-200-DVM-2RU-AC Tray. Specify -ST or -FC for connector type (May require - DVMAUDIO27)
DVM-1700-FTX-MOD-6	Modular, 2 video 9 bit, 4 audio channels, Fiber Optic Transmitter with 1550nm Multimode & Singlemode Laser +0 dBm with FC connector. For UTIL-200-DVM-2RU-AC Tray. Specify -ST or -FC for connector type (May require - DVMAUDIO27)
DVM-1700-FTX-MOD-7-xxxx	Modular, 2 video 9 bit, 4 audio channels, Fiber Optic Transmitter with CWDM 1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm Single-mode Laser 0 dBm with SC connector. Supports up to 8 wavelengths or channels per fiber optic cable. (Enter wavelength for xxxx) For UTIL-200- DVM-2RU-AC Tray. Specify -ST or -FC for connector type (May require -DVMAUDIO27) (May requires CWDM Mux & Demux Accessories)
DVM-1700-FRX-MOD-50	Modular, 2 video, 4 audio channels, Fiber Optic Receiver Multimode & Singlemode PIN with FC connectors, Sensitivity -25 dBm. For UTIL-200-DVM-2RU-AC Tray. Specify -ST or -FC for connector type (May require -DVMAUDIO27)

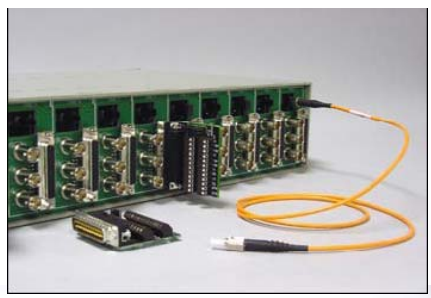
Accessories (SIN 58-6)

-DVMAUDIO27	Audio screw terminal break-out adapter for DVM1700
-NOAUDIO	No Audio Option, price adjustment for units without the 4 audio channels
UTIL-200-DVM-2RU-AC	Analog, Digital and Fiber, 10 Slot, 2RU, Modular Utility Tray, with one 85-265 VAC Power Supply & Line Cord
PS-200-DVM-AC	Modular 85-265 VAC Power Supply & Line Cord for 200 series trays

1 Ch 12 Bit Video, 6 Ch 24 Bit Audio & 3 Ch Data Fiber Optic Multiplexer

SUMMARY

- Supports 1 video, 6 audio and 3 RS-232 simplex data channels
- All digital processing exceeds RS-250C Short Haul specifications.
- Video bandwidth 8 MHz with 75dB S/N; audio 20Hz to 20KHz with 90dB S/N.
- Video gain and 1000 ft cable equalization adjustments for input & output.
- Transport Analog Video & Audio or SDI up to 540 Mbit/sec with Automatic Switch-over on the same fiber (Option for DVM-2200 only).
- Singlemode or multimode configurations.



- 12 Bit Video with a Signal to Noise ratio greater than 75 dB and a Signal to Quantizing Noise ratio of 74 dB.
- Differential Gain and Phase of 0.2% and 0.2°, respectively.
- Video, Audio and Optical front panel status indicators with dry alarm relay contacts.
- Available in portable, rack-mount and modular configurations with all optical wavelengths, LED Multimode and Laser Single-mode.
- Support analog video, analog audio, serial digital video and digital audio in the same tray.

DESCRIPTION

The DVM-2000 series is designed for applications that demand high quality video (12 bit), audio (24 bit) and data transmission over fiber. Applications include links from **studio to transmitter (STL)**, **studio to studio**, **studio to CATV head-end**, **common carrier**, **RBOC Telco circuits**, distance learning, **Intelligent Transportation Systems** & back-haul feeds from special events. This series supports NTSC, PAL, SECAM as well as video with diplexed audio carriers at 4.5MHz, 5.8 MHz and 6.4 MHz (Option for 10 MHz).
The design features differential video and audio inputs that greatly reduce hum and noise.

The DVM-2000 is a compact unit designed for stand alone, wall mount or rack-mount applications, while the DVM-2200 modular card plugs into one of our UTIL-200-DVM series card trays for high density rack mounting. The DVM-2200 with -SDI IN and -SDI OUT options supports analog video and audio or SDI with embedded audio. The analog video and audio do not operate while in the SDI mode. The UTIL-200-DVM card tray can also accommodate cards for other formats such as SDI, analog/AES digital audio and reclocking for maximum flexibility. Advanced CWDM technology is available which enables up to 8 units to be put on one strand of fiber.

SPECIFICATIONS

Video Performance:

Signal to noise	> 75 dB
Differential gain	< +/- 0.2 %
Differential phase	< +/- 0.2 °
Chrominance to luminance gain	< +/- 0.5%
Chrominance to luminance delay	< +/- 5 nsec.
Frequency response to 6 MHz	< +/- 0.05 dB
3 dB Bandwidth	8 MHz
Luminance non-linearity	< 0.2 %
Ringing	< +/- 0.5 %
Tilt	< +/- 0.2 %
Video output & input impedance	75 Ohms
Delay, throughput	1.24 micro sec.
Data channels	3 RS-232C@ 9600 Baud

Audio Performance:

Signal to noise	> 90 dB
Frequency response to **20 Hz to 20 KHz**	< +/- 0.1 dB
Distortion	< 0.05 %
Audio output level, adjustable	Unity, +/- 6 dBm
Maximum input & output level, 600 Ohm	+18 dBm
Audio output impedance, balanced	50 Ohms
Audio input impedance, balanced (selectable)	600 Ohms or High
Power dissipation	< 15 Watts, per unit
AC operation	110 or 220VAC (opt 48VDC)
Operating temperature	0 to +50 °C
Storage temperature	-40 to +95 °C
Portable and Wall-mount:	7” L x 5 ¾” W x 1 ¾” H
Triple Rack-mount Kit for 3 modules:	7” L x 19” W x 1 ¾” H

ORDERING INFORMATION

Fiber Optics, Broadcast Multiplexers, 12 Bit Video, 24 Bit Audio and Data, Stand-alone, Multimode: (SIN 58-6)

DVM-2000-FTX-2	12 bit Video, 6 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Transmitter; exceeds RS-250C Short-haul specs. with 1310nm Multimode LED -14 dBm with ST connector. (May require -DVMAUDIO20, -DVMXLR20, -RMT, -BLANK and -WALL)
DVM-2000-FRX-2	12 bit Video, 6 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Receiver; exceeds RS-250C Short-haul specs, Multimode PIN with ST connectors, Sensitivity -24 dBm. (May require -DVMAUDIO20, -DVMXLR20, -RMT, -BLANK and -WALL)

Fiber Optics, Broadcast Multiplexers, 12 Bit Video, 24 Bit Audio and Data, Stand-alone, Singlemode: (SIN 58-6)

DVM-2000-FTX-50	12 bit Video, 6 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Transmitter; exceeds RS-250C Short-haul specs. with 1310nm Singlemode Laser -8 dBm with FC connector. (May require -DVMAUDIO20, -DVMXLR20, -RMT, -BLANK and -WALL)
DVM-2000-FTX-52	12 bit Video, 6 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Transmitter; exceeds RS-250C Short-haul specs with 1310nm Singlemode Laser -3 dBm with FC connector (May require -DVMAUDIO20, -DVMXLR20, -RMT, -BLANK and -WALL)
DVM-2000-FTX-53	12 bit Video, 6 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Transmitter; exceeds RS-250C Short-haul specs with 1310nm Singlemode Laser +0 dBm with FC connector (May require -DVMAUDIO20, -DVMXLR20, -RMT, -BLANK and -WALL)
DVM-2000-FTX-6	12 bit Video, 6 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Transmitter; exceeds RS-250C Short-haul specs with 1550nm Singlemode Laser +0 dBm with FC connector (May require -DVMAUDIO20, -DVMXLR20, -RMT, -BLANK and -WALL)
DVM-2000-FTX-7-xxxx	12bit Video, 6 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Transmitter; exceeds RS-250C Short-haul specs with CWDM 1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm Single-mode Laser -0 dBm with SC connector. Supports up to 8 wavelengths or channels per fiber optic cable. (Enter wavelength for xxxx) (May require -DVMAUDIO20, -DVMXLR20, -RMT, -BLANK and - WALL) (May requires CWDM Mux & Demux Accessories)
DVM-2000-FRX-50	12 bit Video, 6 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Receiver; exceeds RS-250C Short-haul specs, Singlemode PIN with FC connectors, Sensitivity -28 dBm. (May require -DVMAUDIO20, -DVMXLR20, -RMT, -BLANK and -WALL)

Accessories (SIN 58-6)

-RMT	Triple Rack-mount Kit (1 kit)
-BLANK	Blank panel for rack-mounting kit
-WALL	Wall-mount Kit (1 set)
-DVMAUDIO20	Audio screw terminal break-out adapter for DVM2000
-DVMXLR20	XLR Audio Adapter Cable for DVM2000
-NOAUDIO	No Audio Option, price adjustment for units without the 6 audio channels (subtract $200 per transmitter or receiver)

Fiber Optics, Broadcast Multiplexers, 12 Bit Video, 24 Bit Audio and Data, Modular, Multimode: (SIN 58-6)

DVM-2200-FTX-2	Modular, 12 bit Video, 6 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Transmitter; exceeds RS-250C Short-haul specs. with 1310nm Multimode LED -14 dBm with ST connector for the UTIL-200-DVM Tray. (Optional -DVMAUDIO22, -DVMXLR22, -SDI IN and -SDI OUT)
DVM-2200-FRX-2	Modular, 12 bit Video, 6 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Receiver; exceeds RS-250C Short-haul specs, Multimode PIN with ST connectors, Sensitivity -24 dBm for the UTIL-200-DVM Tray. (Optional -DVMAUDIO22, -DVMXLR22, -SDI IN and -SDI OUT)

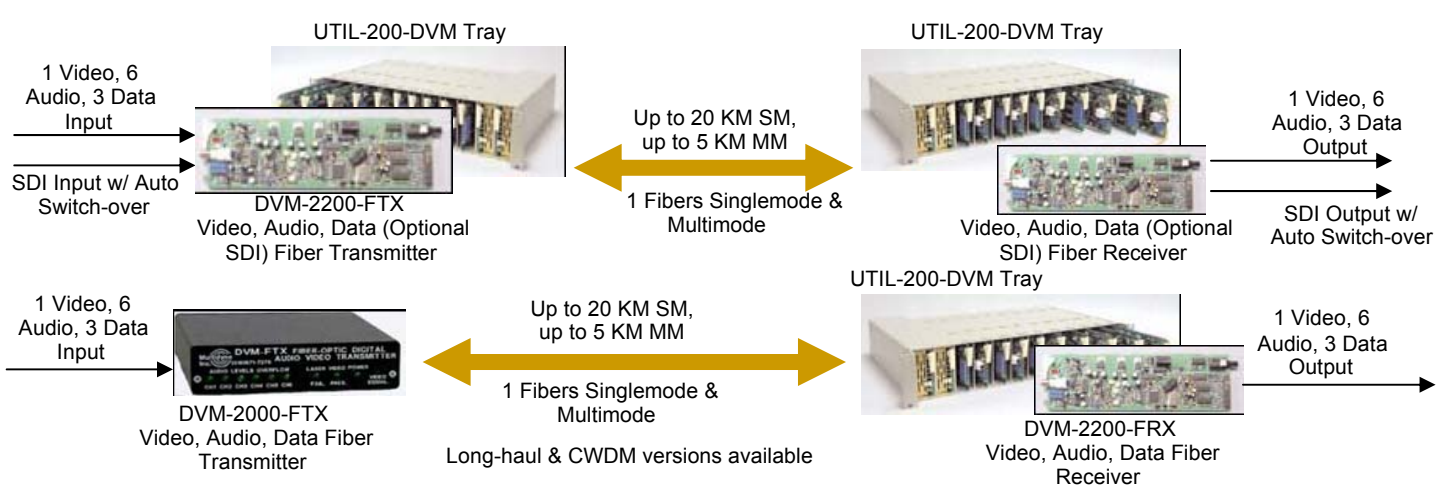
Fiber Optics, Broadcast Multiplexers, 12 Bit Video, 24 Bit Audio and Data, Modular, Singlemode:

DVM-2200-FTX-50	Modular, 12 bit Video, 6 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Transmitter; exceeds RS-250C Short-haul specs. with 1310nm Single-mode Laser -8 dBm with FC connector for the UTIL-200-DVM Tray. (Optional -DVMAUDIO22, -DVMXLR22, -SDI IN and -SDI OUT)
DVM-2200-FTX-52	Modular, 12 bit Video, 6 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Transmitter; exceeds RS-250C Short-haul specs. with 1310nm Single-mode Laser -3 dBm with FC connector (Optional -DVMAUDIO22, -DVMXLR22, -SDI IN and -SDI OUT)
DVM-2200-FTX-53	Modular, 12 bit Video, 6 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Transmitter; exceeds RS-250C Short-haul specs. with 1310nm Single-mode Laser +0 dBm with FC connector (Optional -DVMAUDIO22, -DVMXLR22, -SDI IN and -SDI OUT)
DVM-2200-FTX-6	Modular, 12 bit Video, 6 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Transmitter; exceeds RS-250C Short-haul specs. with 1550nm Single-mode Laser +0 dBm with FC connector (Optional -DVMAUDIO22, -DVMXLR22, WDM-95, -SDI IN and -SDI OUT)
DVM-2200-FTX-7-xxxx	Modular, 12 bit Video, 6 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Transmitter; exceeds RS-250C Short-haul specs with CWDM 1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm Single-mode Laser 0 dBm with SC connector. Supports up to 8 wavelengths or channels per fiber optic cable. (Enter wavelength for xxxx) (Optional -DVMAUDIO22, -DVMXLR22, -SDI IN and - SDI OUT) (May requires CWDM Mux & Demux Accessories)
DVM-2200-FRX-50	Modular, 12 bit Video, 6 Channels of 24 bit Audio and 3 Channels of RS232 Data, Fiber Optic Receiver; exceeds RS-250C Short-haul specs, Singlemode PIN with FC connectors, Sensitivity -25 dBm for the UTIL-200-DVM Tray. (Optional -DVMAUDIO22, -DVMXLR22, -SDI IN and -SDI OUT)
-SDI IN	Serial Digital Video input for DVM-2200-FTX Transmitter with auto switch-over from analog video to SDI when present (optional).
-SDI OUT	Serial Digital Video output for DVM-2200-FRX Receiver with auto switch-over from analog video to SDI when present (optional).

Modular Utility Trays and Power Supplies & Accessories (SIN 58-6)

UTIL-200-DVM-2RU-AC	Analog, Digital and Fiber, up to 10 Slots, 2RU, Modular Utility Tray, with one 85-265 VAC Power Supply & Line Cord. **Supports the DVM-2200 & DTV-220/230 SDI cards.**
PS-200-DVM-AC	Modular 85-265 VAC Power Supply & Line Cord for 200 series trays
-DVMAUDIO22	Audio screw terminal break-out adapter for DVM2200
-DVMXLR22	XLR Audio Adapter Cable for DVM2200

Application Diagram for DVM2000 & DVM2200 Video, Audio & Data Fiber Optic Transport System


UTIL-200-DVM Tray
1 Video, 6 Audio, 3 Data Input
SDI Input w/ Auto Switch-over
DVM-2200-FTX
Video, Audio, Data (Optional SDI) Fiber Transmitter
Up to 20 KM SM, up to 5 KM MM
1 Fibers Singlemode & Multimode
UTIL-200-DVM Tray
Video, Audio, Data (Optional SDI) Fiber Receiver
1 Video, 6 Audio, 3 Data Output
SDI Output w/ Auto Switch-over
1 Video, 6 Audio, 3 Data Input
DVM-2000-FTX
Video, Audio, Data Fiber Transmitter
Up to 20 KM SM, up to 5 KM MM
1 Fibers Singlemode & Multimode
Long-haul & CWDM versions available
UTIL-200-DVM Tray
DVM-2200-FRX
Video, Audio, Data Fiber Receiver
1 Video, 6 Audio, 3 Data Output

Bi-directional, 1 Video, 8 Audio & 2 Data Fiber Optic Multiplexer

SUMMARY

- Supports **1 video, 8 audio and 2 data channels** with 1 tally dry contact closure Bi-directionally over ONE optical fiber.
- Exceeds RS-250C Short-haul and Broadcast Video specifications.
- 12 Bit Video with a Signal to Noise ratio greater than 72 dB and a Signal to Quantizing Noise ratio of 71 dB.
- Video Bandwidth of 8 MHz for support of NTSC, PAL, SECAM and video with diplexed audio carriers at 4.5 MHz, 5.8 MHz and 6.4 MHz (Option for 10 MHz).
- Differential Gain and Phase of less than 0.2% and 0.2°, respectively.
- Differential video and audio inputs for superior Common-mode Hum and Noise rejection of greater than 60 dB.
- Video channel isolation greater than 90 dB using a Red Field test signal.
- Front panel video output gain.
- 24 Bit Audio flat from 20 to 20K Hz, S/N greater than 90 dB and THD less than 0.05%.
- Video and Optical front panel status indicators with dry alarm relay contacts.
- Optical budget of up to 24 dB for Single-mode.
- Available in portable and rack-mount configurations.
- Applications include links from studio to transmitter (STL), studio to studio, studio to CATV head-end, common carrier, teleconferencing, RBOC Telco circuits, distance learning, Intelligent Transportation Systems & back-haul feeds from special events.

DESCRIPTION

The DVM-2500 series is a compact standalone unit designed to provide bi-directional video, audio and data transmission over one strand of single mode fiber.
It is ideally suited to applications such as teleconferencing, distance learning, STL and studio to studio links.

The DVM-2500 series supports NTSC, PAL, SECAM as well as video with diplexed audio carriers at 4.5MHz, 5.8 MHz and 6.4 MHz (Option for 10 MHz). The design features differential video and audio inputs which greatly reduce hum and noise. Video and Optical front panel status indicators with dry alarm relay contacts.

SPECIFICATIONS

Signal to noise	> 72 dB
Video channel isolation with Red Field	> 90 dB
Differential gain	< +/- 0.2 %
Differential phase	< +/- 0.2 °
Chrominance to luminance gain	< +/- 0.5 %
Chrominance to luminance delay	< +/- 5 nsec.
Frequency response to 6 MHz	< +/- 0.05 dB
3 dB Bandwidth	8 MHz
Luminance non-linearity	< 0.2%
Ringing	< +/- 0.5 %
Tilt	< +/- 0.2 %
Video output & input impedance	75 Ohms
Delay, throughput	1.24 micro sec.
Signal to noise	> 90 dB
Frequency response to **20 Hz to 20 KHz**	< +/- 0.1 dB
Distortion	< 0.05 %
Audio output level, adjustable Unity,	+/- 6 dBm
Maximum input & output level, 600 Ohm termination	+18 dBm
Audio output impedance, balanced	50 Ohms
Audio input impedance, balanced (selectable)	600 Ohms or High
Data channels (at 9600 Baud)	2 RS-232C, RS422, RS485, TTL
Power dissipation	< 15 Watts, per unit
AC operation	110 or 220 VAC
Operating temperature	0 to +50 °C
Portable and Wall-mount:	7" L x 5 ¾" W x 1 ¾" H
Triple Rack-mount Kit for 3 modules (Part number -RMT)	7" L x 19" W x 1 ¾" H

ORDERING INFORMATION

Bi-directional Video, Audio and Data Fiber Optic Multiplexer, Stand-alone, Multimode (SIN 58-6)

DVM-2500-FMX-38	1 video, 6 audio and 2 data channel with tally, Bi-directional, Fiber Optic, Transceiver; exceeds RS-250C Short-haul specs. with WDM for 1310nm Multimode Laser 0 dBm, 850nm Singlemode PIN, Sensitivity -24 dBm with FC, SC or ST connector. (Requires both -35 and -53 versions for 1 link)(May require -DVMAUDIO25, -RMT, -BLANK, -WALL)
DVM-2500-FMX-83	1 video, 6 audio and 2 data channel with tally, Bi-directional, Fiber Optic, Transceiver; exceeds RS-250C Short-haul specs. with WDM 850nm Multimode Laser 0 dBm and 1310 Singlemode PIN, Sensitivity -24 dBm with FC, SC or ST connector. (Requires both -35 and - 53 versions for 1 link) (May require -DVMAUDIO25, -RMT, -BLANK, -WALL)

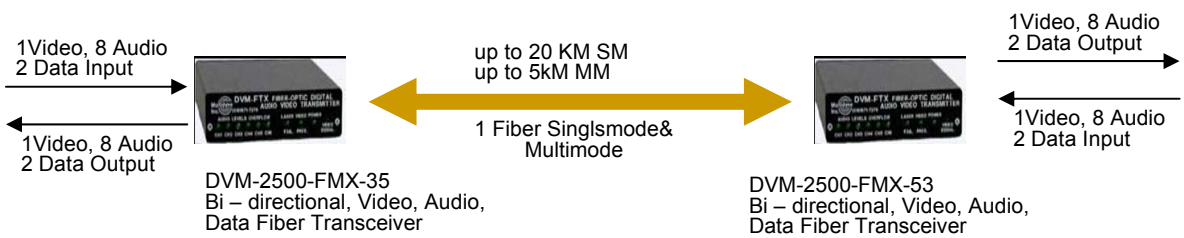
Bi-directional Video, Audio and Data Fiber Optic Multiplexer, Stand-alone, Singlemode (SIN 58-6)

DVM-2500-FMX-35	1 video, 6 audio and 2 data channel with tally, Bi-directional, Fiber Optic, Transceiver; exceeds RS-250C Short-haul specs. with WDM for 1310nm Single-mode Laser 0 dBm, 1550nm Singlemode PIN, Sensitivity -24 dBm with FC, SC or ST connector. (Requires both -35 and -53 versions for 1 link) (May require -DVMAUDIO25, -RMT, -BLANK, -WALL)
DVM-2500-FMX-53	1 video, 6 audio and 2 data channel with tally, Bi-directional, Fiber Optic, Transceiver; exceeds RS-250C Short-haul specs. with WDM 1550nm Single-mode Laser 0 dBm and 1310 Singlemode PIN, Sensitivity -24 dBm with FC, SC or ST connector. (Requires both -35 and -53 versions for 1 link) (May require -DVMAUDIO25, -RMT, -BLANK, -WALL)

Accessories (SIN 58-6)

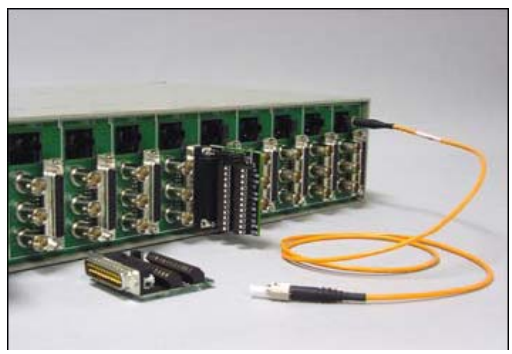
-RMT	Triple Rack-mount Kit (1 kit)
-BLANK	Blank panel for rack-mounting kit
-WALL	Wall-mount Kit (1 set)
-DVMAUDIO25	Audio screw terminal break-out adapter for DVM2500
-NOAUDIO	No Audio Option, price adjustment for units without the 10 audio channels (subtract $1000 per side)

Application Diagram for DVM2500 Bi-directional, Video, Audio & Data Fiber Optic Transport System



2 Video & 8 Audio Fiber Optic Multiplexer

SUMMARY



- Supports 2 video and 8 audio channels on one strand of fiber.
- All digital processing exceeds RS-250C Short haul and Broadcast specifications.
- 12 Bit Video with a Signal to Noise ratio greater than 75 dB and a Signal to Quantizing Noise ratio of 74 dB.
- Video Bandwidth of 8 MHz for support of NTSC, PAL, SECAM and video with diplexed audio carriers at 4.5 MHz, 5.8 MHz and 6.4 MHz (Option for 10 MHz).
- Differential Gain and Phase of 0.2% and 0.2°, respectively.
- Differential video and audio inputs for superior Common-mode Hum and Noise rejection of greater than 60 dB.
- 24 Bit Audio flat from 20 to 20K Hz, S/N greater than 90 dB and THD less than 0.05%.
- Video, Audio and Optical front panel status indicators with dry alarm relay contacts.
- Coarse Wave-division Multiplexing (CWDM) systems are available for up to 8 wavelengths over ONE optical fiber.
- Optical budget of up to 28 dB for Single-mode.
- Supports 2 video channel and 8 audio channels over one optical fiber.
- Universal AC operation for 85-265 VAC and Telco DC operation for 48 VDC.
- Available in rack-mount configurations with all optical wavelengths, LED Multimode and Laser Single- mode.
- Applications include links from studio to transmitter (STL), studio to studio, studio to CATV head-end, common carrier, RBOC Telco circuits, distance learning, Intelligent Transportation Systems & back- haul feeds from special events.

The DVM-2700 is ideal for applications that require multiple video and audio to be transmitted over one fiber. Applications include back haul, studio to studio and STL. The all-digital processing,12 bit video and 24 bit audio, provides superior performance characteristics. Advanced CWDM technology allows up to 8 lengths to be put on one strand of fiber.

DESCRIPTION

The DVM-2700 series supports NTSC, PAL, SECAM as well as video with diplexed audio carriers at 4.5MHz, 5.8 MHz and 6.4 MHz (Option for 10 MHz). The design features differential video and audio inputs, which greatly reduce hum and noise. Video and Optical front panel status indicators with dry alarm relay contacts. A -RMT kit allows unit to be mounted in a standard 19” equipment rack.

SPECIFICATIONS

Exceeds the RS-250C Short-haul specification.

Video Performance:

Signal to noise _____> 75 dB
Differential gain _____< +/- 0.2 %
Differential phase _____< +/- 0.2 °
Chrominance to luminance gain _____< +/- 0.5%
Chrominance to luminance delay _____< +/- 5 nsec.
Frequency response to 6 MHz _____< +/- 0.05 dB
3 dB Bandwidth _____8 MHz
Luminance non-linearity _____< 0.2 %
Ringing _____< +/- 0.5 %
Tilt _____< +/- 0.2 %
Video output & input impedance _____75 Ohms
Delay, throughput _____1.24 micro sec.

Audio Performance:

Signal to noise _____> 90 dB
Frequency response to **20 Hz to 20 KHz** _____< +/- 0.1 dB
Distortion _____< 0.05 %
Audio output level, adjustable _____Unity, +/- 6 dBm
Maximum input & output level, _____600 Ohm termination +18 dBm
Audio output impedance, balanced _____50 Ohms
Audio input impedance, balanced (selectable) _____600 Ohms or High
Data channels _____3 RS-232C at 9600 Baud
Power dissipation _____< 15 Watts, per unit
AC operation _____110 or 220 VAC (optional 48VDC)
Operating temperature _____0 to +50 °C
Portable and Wall-mount: _____7" L x 5 ¾" W x 1 ¾" H
Triple Rack-mount Kit for 3 modules (Part number -RMT): __7" L x 19" W x 1 ¾" H

ORDERING INFORMATION

Two Channel, Video & Audio Fiber Optic Multiplexer, Modular, Multimode & Singlemode (SIN 58-6)

DVM-2700-FTX-MOD-50 Modular, 2 video, 8 audio channels, Fiber Optic Transmitter; exceeds RS-250C Short-haul specs. with 1310nm Multimode & Singlemode Laser -8 dBm with FC connector. For UTIL-200-DVM-2RU-AC Tray. Specify -ST or -FC for connector type (May require - DVMAUDIO27)

DVM-2700-FTX-MOD-52 Modular, 2 video, 8 audio channels, Fiber Optic Transmitter; exceeds RS-250C Short-haul specs. with 1310nm Multimode & Singlemode Laser -3 dBm with FC connector. For UTIL-200-DVM-2RU-AC Tray. Specify -ST or -FC for connector type (May require - DVMAUDIO27)

DVM-2700-FTX-MOD-53 Modular, 2 video, 8 audio channels, Fiber Optic Transmitter; exceeds RS-250C Short-haul specs. with 1310nm Multimode & Singlemode Laser +0 dBm with FC connector. For UTIL-200-DVM-2RU-AC Tray. Specify -ST or -FC for connector type (May require - DVMAUDIO27)

DVM-2700-FTX-MOD-6 Modular, 2 video, 8 audio channels, Fiber Optic Transmitter; exceeds RS-250C Short-haul specs. with 1550nm Multimode & Singlemode Laser +0 dBm with FC connector. For UTIL-200-DVM-2RU-AC Tray. Specify -ST or -FC for connector type (May require - DVMAUDIO27)

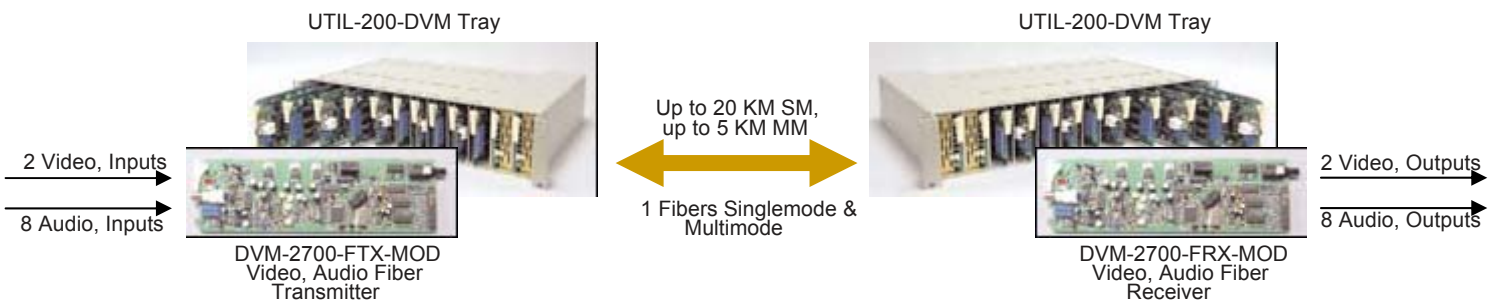
DVM-2700-FTX-MOD-7-xxxx Modular, 2 video, 8 audio channels, Fiber Optic Transmitter; exceeds RS-250C Short-haul specs. with CWDM 1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm Single-mode Laser 0 dBm with SC connector. Supports up to 8 wavelengths or channels per fiber optic cable. (Enter wavelength for xxxx) For UTIL-200-DVM-2RU-AC Tray. Specify -ST or -FC for connector type (May require - DVMAUDIO27) (May requires CWDM Mux & Demux Accessories)

DVM-2700-FRX-MOD-50 Modular, 2 video, 8 audio channels, Fiber Optic Receiver; exceeds RS-250C Short-haul specs, Multimode & Singlemode PIN with FC connectors, Sensitivity -25 dBm. For UTIL-200-DVM-2RU-AC Tray. Specify -ST or -FC for connector type (May require -DVMAUDIO27)

Accessories (SIN 58-6)

-DVMAUDIO27	Audio screw terminal break-out adapter for DVM2700
-NOAUDIO	No Audio Option, price adjustment for units without the 10 audio channels (subtract $1000 per transmitter or receiver)
UTIL-200-DVM-2RU-AC	Analog, Digital and Fiber, 10 Slot, 2RU, Modular Utility Tray, with one 85-265 VAC Power Supply & Line Cord
PS-200-DVM-AC	Modular 85-265 VAC Power Supply & Line Cord for 200 series trays
UTIL-200-DVM-2RU-48VDC	Analog, Digital and Fiber, 10 Slot, 2 RU, Modular Utility Tray, with one 36-60 VDC Power Supply (Delivery 10 Weeks)
PS-200-DVM-48VDC	Modular 36-60 VDC Power Supply for 200 series trays (Delivery 10 Weeks)

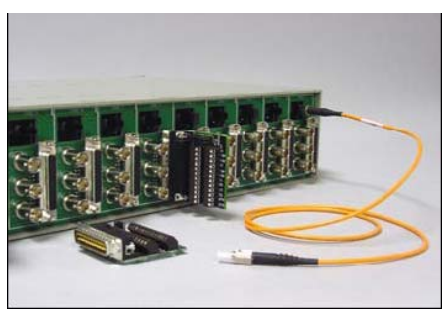
Application Diagram for DVM2500 Bi-directional, Video, Audio & Data Fiber Optic Transport System


UTIL-200-DVM Tray
UTIL-200-DVM Tray
2 Video, Inputs
8 Audio, Inputs
Up to 20 KM SM, up to 5 KM MM
1 Fibers Singlemode & Multimode
2 Video, Outputs
8 Audio, Outputs
DVM-2700-FTX-MOD Video, Audio Fiber Transmitter
DVM-2700-FRX-MOD Video, Audio Fiber Receiver

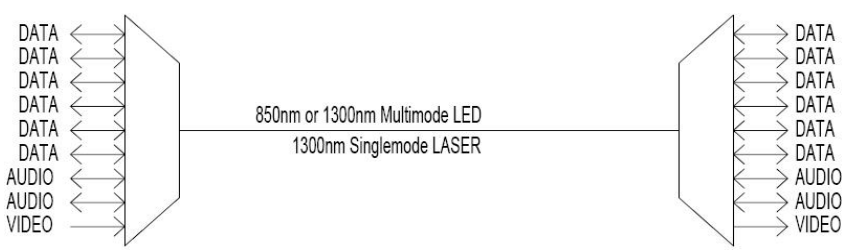
1 Ch. 12 Bit Video, 2 Bi-dir Audio & 8 Bi-dir Data Fiber Optic Multiplexer for Surveillance and Transportation

SUMMARY

- Exceeds RS-250C Short-haul and Broadcast Video specifications.
- 12 Bit Video with a Signal to Noise ratio greater than 75 dB and a Signal to Quantizing Noise ratio of 74 dB.
- Video Bandwidth of 8 MHz for support of NTSC, PAL and SECAM (Option for 10 MHz).
- Differential Gain and Phase of 0.2% and 0.2°, respectively.
- Video Gain and up to 3000 feet cable equalization or sharpness control.
- 24 bit, Bi-directional Audio flat from 20 to 20K Hz, S/N greater than 90 dB and THD less than 0.05%.
- Supports up to 8 bi-directional, full duplex, data channels of RS-232C, RS-422, RS-485, CMOS or TTL at up to 115.2 Kbps. The data interface protocol is dipswitch configurable in banks of 4 channels. For example you can have 4 RS232 and 4 RS422 channels or 8 RS232 channels.
- Data Squelching Circuit. With the loss of link integrity or fiber disconnection, the data I/O's will not stream.



- Video, Audio and Optical front panel status indicators.
- Optical budget of up to 24 dB.
- Supports 1 video, 2 duplex audio and up to 8 bi-directional data channels over ONE optical fiber.
- AC operation for 110/220 VAC and optionally for 48 VDC.
- Available in portable, rack-mount and modular configurations with all optical wavelengths.
- Applications include distance learning, Intelligent Transportation Systems and surveillance.
- Temperature range -40° to +75°C.

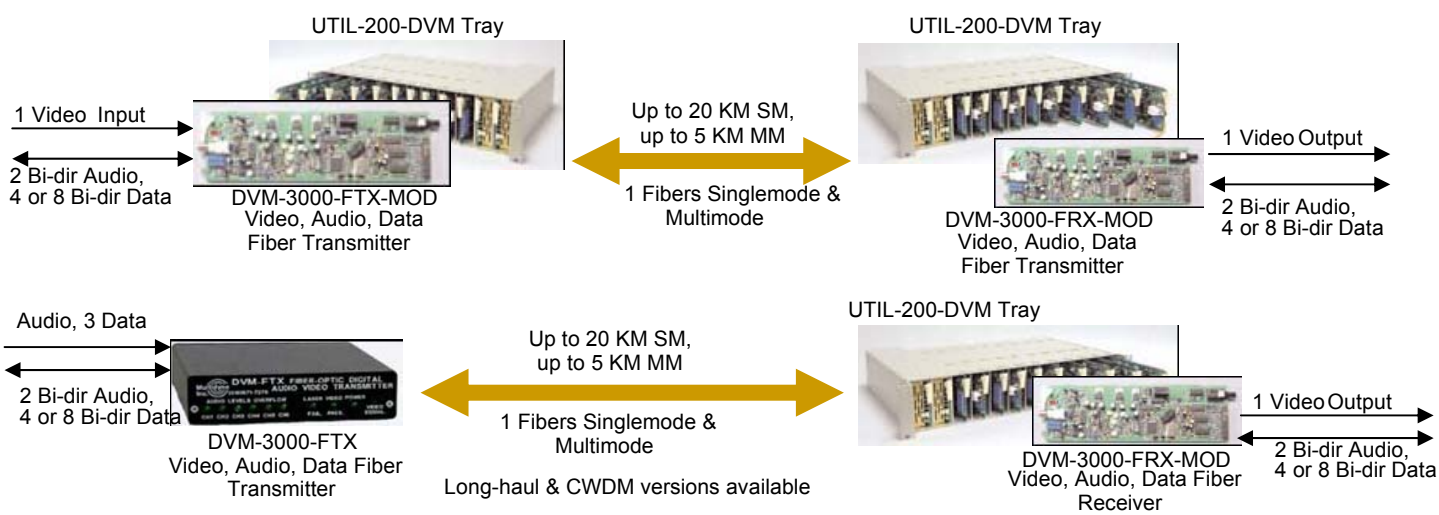


SPECIFICATIONS

Exceeds the RS-250C Short-haul and Broadcast specification. Specifications subject to change without notice.

Video Input	1 Vp-p	Data Channel Protocol (selectable in banks of 4 ch.)	RS-232C, RS-422 or RS-485 Data
Signal to noise	> 75 dB	Data Configuration (RS422 mode supports RS485)	Data Channels 0 & 1=RS422 I/O, 2 & 3=RS232 I/O; No termination.
Differential gain	< +/- 0.2 %		Data Ch 0, 1 & 2=RS422 I/O, 3=RS422 In & RS232 Out; RS422 Termination ON.
Differential phase	< +/- 0.2 °		Data Channels 0 thru 3=RS232 I/O; No termination.
Chrominance to luminance gain	< +/- 0.5 %	Data Rate	DC to 115.2 Kbps
Chrominance to luminance delay	< +/- 5 nsec.	Data and Audio I/O's	44 pins D-Type Connector, Optional screw terminal adapter
Frequency response to 6 MHz	< +/- 0.05 dB	Bit Error Rate	< 1x10-9
3 dB Bandwidth	8 MHz	Power dissipation	< 15 Watts, per unit
Luminance non-linearity	< 0.2 %	AC operation	110 or 220 VAC (optional 48VDC)
Ringing	< +/- 0.5 %	Operating temperature	-40° to +75°C
Tilt	< +/- 0.2 %	Operating Humidity	0-95% non-condensing
Video output & input impedance	75 Ohms	Wavelength	1310/1550nm
Differential video input option	120 Ohms, part # -DIFFIN	Output Power, minimum	0 dBm Singlemode
Cable Equalizer, optional (3000 feet)	>30 dB @ 10 MHz	Receiver Sensitivity	-24 dBm Singlemode
Portable and Wall-mount:	7" L x 5 ¾" W x 1 ¾" H	Optical Loss Budget, minimum	24 dBm Singlemode
Triple Rack-mount Kit for 3 modules (Part number -RMT):	7" L x 19" W x 1 ¾" H		
UTIL-200-DVM 10 Slot Tray	13 ¾" L x 19" W x 3 ½" H		

Application Diagram for DVM3000 & DVM3000-MOD Video, Audio & Data Fiber Optic Transport System



ORDERING INFORMATION

	Fiber Optics, Surveillance & Transportation Video, Voice and Data Multiplexers, Stand-alone, Multimode: (SIN 58-6)
DVM-3000-FTX-38-ST	Standalone, 12 bit Video Fiber Optic Transmitter; exceeds RS-250C Short-haul specs, with up to 8 optional bi-directional Data Channels, Supports RS-232, RS-422 and RS-485 jumper selectable, with 1310nm Multimode Laser 0 dBm and 850nm PIN with FC or ST connector, Sensitivity -24 dBm. Wall-mount 110 or 220VAC power supply included. Specify –ST or –FC for connector type (May require -DVMAUDIO30, -4DATA, -8DATA, -VOICE, -RMT, -BLANK and -WALL)
DVM-3000-FRX-83-ST	Standalone, 12 bit Video, Fiber Optic Receiver; exceeds RS-250C Short-haul specs, with up to 8 optional bi-directional Data Channels, Supports RS-232, RS-422 and RS-485 jumper selectable, 850nm Multimode Laser 0 dBm and 1310nm PIN with FC or ST connectors, Sensitivity -24 dBm. Wall-mount 110 or 220VAC power supply included. Specify –ST or –FC for connector type (May require -DVMAUDIO30, -4DATA, -8DATA, -VOICE, -RMT, -BLANK and -WALL)
	Fiber Optics, Surveillance & Transportation Video, Voice and Data Multiplexers, Modular, Multimode: (SIN 58-6)
DVM-3000-FTX-MOD-38-ST	Modular, 12 bit Video Fiber Optic Transmitter; exceeds RS-250C Short-haul specs, with up to 8 optional bi-directional Data Channels, Supports RS-232, RS-422 and RS-485 jumper selectable, with 1310nm Multimode Laser 0 dBm and 850nm PIN with FC or ST connector, Sensitivity -24 dBm. For UTIL-200-DVM-2RU-AC Tray. Specify –ST or –FC for connector type (May require -DVMAUDIO30, -4DATA, -8DATA, -VOICE)
DVM-3000-FRX-MOD-83-ST	Modular, 12 bit Video, Fiber Optic Receiver; exceeds RS-250C Short-haul specs, with up to 8 optional bi-directional Data Channels, Supports RS-232, RS-422 and RS-485 jumper selectable, 850nm Multimode Laser 0 dBm and 1310nm PIN with FC or ST connectors, Sensitivity -24 dBm. For UTIL-200-DVM-2RU-AC Tray. Specify –ST or –FC for connector type (May require -DVMAUDIO30, -4DATA, -8DATA, -VOICE, -RMT, -BLANK and -WALL)
	Fiber Optics, Surveillance & Transportation Video, Voice and Data Multiplexers, Stand-alone, Singlemode: (SIN 58-6)
DVM-3000-FTX-35-ST	Standalone, 12 bit Video Fiber Optic Transmitter; exceeds RS-250C Short-haul specs, **with up to 8 optional bi-directional Data Channels,** Supports RS-232, RS-422 and RS-485 jumper selectable, with 1310nm Single-mode Laser 0 dBm and 1550nm PIN with FC or ST connector, Sensitivity -24 dBm. Wall-mount 110 or 220VAC power supply included. Specify –ST or –FC for connector type (May require -DVMAUDIO30, -4DATA, -8DATA, -VOICE, -RMT, -BLANK and -WALL)
DVM-3000-FRX-53-ST	Standalone, 12 bit Video, Fiber Optic Receiver; exceeds RS-250C Short-haul specs, **with up to 8 optional bi-directional Data Channels**, Supports RS-232, RS-422 and RS-485 jumper selectable, 1550nm Singlemode Laser 0 dBm and 1310nm PIN with FC or ST connectors, Sensitivity -24 dBm. Wall-mount 110 or 220VAC power supply included. Specify –ST or –FC for connector type (May require -DVMAUDIO30, -4DATA, -8DATA, -VOICE, -RMT, -BLANK and -WALL)
	Fiber Optics, Surveillance & Transportation Video, Voice and Data Multiplexers, Modular, Singlemode: (SIN 58-6)
DVM-3000-FTX-MOD-35-ST	Modular, 12 bit Video Fiber Optic Transmitter; exceeds RS-250C Short-haul specs, **with up to 8 optional bi-directional Data Channels,** Supports RS-232, RS-422 and RS-485 jumper selectable, with 1310nm Single-mode Laser 0 dBm and 1550nm PIN with FC or ST connector, Sensitivity -24 dBm. For UTIL-200-DVM-2RU-AC Tray. Specify –ST or –FC for connector type (May require -DVMAUDIO30, -4DATA, -8DATA, -VOICE)
DVM-3000-FRX-MOD-53-ST	Modular, 12 bit Video, Fiber Optic Receiver; exceeds RS-250C Short-haul specs, **with up to 8 optional bi-directional Data Channels**, Supports RS-232, RS-422 and RS-485 jumper selectable, 1550nm Singlemode Laser 0 dBm and 1310nm PIN with FC or ST connectors, Sensitivity -24 dBm. For UTIL-200-DVM-2RU-AC Tray. Specify –ST or –FC for connector type (May require -DVMAUDIO30, -4DATA, -8DATA, -VOICE, -RMT, -BLANK and -WALL)
	Options, Modular Utility Trays and Power Supplies (SIN 58-6)
-4DATA	4 bi-directional, Ful Duplex, Data Channels, Supports RS-232, RS-422 & RS-485 jumper selectable. (1) each for transmitter & receiver side.
-8DATA	8 bi-directional, Full Duplex, Data Channels, Supports RS-232, RS-422 & RS-485 jumper selectable. (1) each for transmitter & receiver side.
-VOICE	20-20KHz Digital Codec for Bi-directional Stereo Audio Ch., (1) each for transmitter and receiver side
-DIFFIN	120 Ohm Differential Video Input option
-RMT	Triple Rack-mount Kit (1 kit)
-WALL	Wall-mount Kit (1 set)
-BLANK	Blank panel for rack-mounting kit
-DVMBREAK30	Audio and Dada screw terminal break-out adapter for DVM3000
UTIL-200-DVM-2RU-AC	Analog, Digital and Fiber, 10 Slot, 2RU, Modular Utility Tray, with one 85-265 VAC Power Supply & Line Cord
PS-200-DVM-AC	Modular 85-265 VAC Power Supply & Line Cord for 200 series trays
UTIL-200-DVM-2RU-48VDC	Analog, Digital and Fiber, 10 Slot, 2 RU, Modular Utility Tray, with one 36-60 VDC Power Supply (Delivery 10 Weeks)
PS-200-DVM-48VDC	Modular 36-60 VDC Power Supply for 200 series trays (Delivery 10 Weeks)

4 Video and 16 Audio Channel Fiber Optic Link

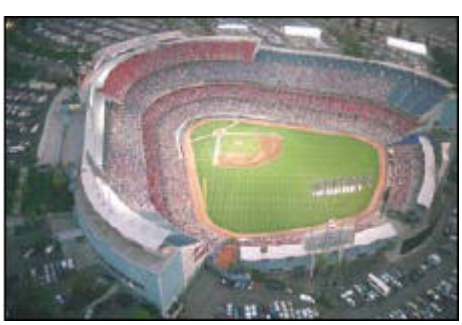
SUMMARY

The DVM-4200 Video and Audio Fiber Optic Transport provides state-of-the-art performance exceeding RS250C Short-haul and Broadcast Specifications. The system will support 4 video, 16 audio and 4 data channels. A one rack-unit, modular tray will house up to three DVM-4200, DVM-8200 or DIM-8200 cards.

The video Signal to Noise ratio is greater than 75 dB and a Signal to Quantizing Noise ratio of greater than 71 dB. The video bandwidth of 8 MHz support of NTSC, PAL, SECAM and video with diplexed audio carriers at 4.5 MHz, 5.8 MHz and 6.4 MHz. The Differential Gain and Phase is less than of 0.3% and 0.3°, respectively. The DVM-4000 supports 24 Bit Stereo Audio flat from 20 to 20K Hz with S/N greater than 90 dB and THD less than 0.05%. The systems supports 110/220 VAC and optionally for 48 VDC.

The Optical budget exceeds 30 dBm. The system is available with 1310nm and 1550nm wavelength Lasers for WDM application. Coarse-Wave Division Multiplexing is available with 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610nm wavelength Lasers.

Applications include links from studio to transmitter (STL), studio to studio, studio to CATV head- end, distance learning, satellite up and down links, common carrier transport, Telco circuits, distance learning, Intelligent Transportation Systems and back-haul feeds from special events.



. Transport **4 video and 16 audio channels over *ONE* fiber or wavelength**
. **Modular in design,** plugs into the **Hydra Series**, **3 slot, 1 RU Tray** or the **10 slot, 3 RU Tray.**
. **10 Bit Video** with a **Signal to Noise** ratio greater than **68 dB** and a **Signal to Quantizing Noise** ratio **69 dB**.
. Video **Bandwidth** of **7 MHz** for support of NTSC, PAL, SECAM and video with diplexed audio carriers at 4.5 MHz, 5.8 MHz and 6.4 MHz
. **Differential Gain** and **Phase** of **0.3%** and **0.3**°.
. **24 Bit Audio** flat from **20 to 20K Hz, S/N** greater than **90 dB** and **THD** less than **0.05%.**
. Interfaces with our **Tactical Fiber Optic Cabling and Spool** system with **Hermaphroditic, Lemo** or **TFOCA II** connectors.
. **Optical budget** of up to **30 dB** for Single-mode.
. **Coarse Wave-division Multiplexing (CWDM)** available with support for 8 or 16 wavelengths per optical fiber.
. AC operation for **110/220 VAC**. DC operation for **48 VDC** and **14.7 VDC Battery**.
. The system is **100% DIGITAL**, high density and modular in design for complete versatility and expansion. Don't use 20-year-old analog technology.
. Applications include links Sports, ENG, SNG, Field Production, Film, Studio to Studio, STL, Studio to Head-end, Military, Surveillance plus many more.

DESCRIPTION

The DVM-4200 is a member of the HYDRA series of cards designed to put multiple video and audio channels onto one strand of fiber. It is ideal for applications such as SNG, ENG, field production and military applications.
The DVM-4200 transports 4 video and 16 audio channels.
All digital processing of video and audio exceeds RS-250C Short Haul specifications.
Other members of the HYDRA family include the DVM-8200 which provides transport for 8 video and 32 audio channels.
The DVM-4200 can be coupled with advanced CWDM technology so that a single fiber can be configured to carry any combination of video and audio signals.
The HYDRA series can be combined with the TAC-2000 Tactical fiber cable/spool assembly making it the perfect solution for remote broadcast and military applications.

The system is ideal for sports, electronic news gathering (ENG), field remotes, conventions, concerts and stadium events.
Thetransmitter and receiver units are connected with the military approved tactical fiber optic cable system, TAC-2000.
The system consists of a ruggedized field unit, which is water resistant and fully configurable.
The other end of the system is also fully configurable and rack-mountable in one, two or three rack units depending on the features. The TAC-2000 is available in 4, 8 and 12 fiber optic cable configurations.
The Video and Fiber Optic Transport offers state-of-the-art performance exceeding RS250C Short-haul and Broadcast Specifications.
The video Signal to Noise ratio is greater than 68 dB and a Signal to Quantizing Noise ratio of greater than 69 dB.
The video bandwidth of 7 MHz supports NTSC, PAL, SECAM and video with diplexed audio carriers at 4.5 MHz, 5.8 MHz and 6.4 MHz.
The Differential Gain and Phase is less than of 0.3% and 0.3°, respectively.
The DVM-4200 supports 24 Bit Stereo Audio flat from 20 to 20K Hz with S/N greater than 90 dB and THD less than 0.05%.
The system is available with 110/220 VAC, 14.7 VDC and 48 VDC.
There are other systems available on the market today.
Multidyne is the only provider of fully digital technology for video, audio, data, intercom and telephone transport.
A fully digital system never requires recalibration and maintenance and offers superior stability over environmental changes.
An Optical budget of up to 30 dBm is available.
The system is available with 1310nm and 1550nm wavelength Lasers for WDM application.
Coarse Wave Division Multiplexing (CWDM) is available with 1470, 1490, 1510, 1530, 1550, 1570, 1590 and 1610nm wavelength Lasers.

SPECIFICATIONS

Video Performance:

Signal to noise _____> 68 dB
Differential gain _____< +/- 0.3 %
Differential phase _____< +/- 0.3 °
Chrominance to luminance gain _____< +/- 1 %
Chrominance to luminance delay __< +/- 10 nsec.
Frequency response to 6 MHz ____< +/- 0.1 dB
3 dB Bandwidth _____7 MHz
Luminance non-linearity _____< 1 %
Ringing _____< +/- 0.5 %
Tilt _____ < +/- 0.2 %
Video output & input impedance _____75 Ohms

Audio Performance:

Signal to noise _____> 90 dB
Frequency response to **20 Hz to 20 KHz** ____< +/- 0.1 dB
Distortion _____< 0.05 %
Audio output level _____Unity
Maximum input & output level, 600-Ohm termination _____+18 dBm
Audio output impedance, balanced _____50 Ohms
Audio input impedance, balanced (selectable) ___600 Ohms or High
Power dissipation _____< 30 Watts, per unit
AC/DC operation _____110 or 220 VAC, 14.7 or 48 VDC
Operating temperature _____0 to +50 °C

ORDERING INFORMATION

4 Channel, 10 Bit Video, 24 Bit Audio and Data, Fiber Optic Multiplexer, Modular, Singlemode: (SIN 58-6)

DVM-4200-FTX-50 Modular, 4 ch. 10 bit Video, 16 Ch. of 24 bit Audio and 4 Ch. Simplex Data, Fiber Optic Transmitter; exceeds RS-250C Short-haul specs. with 1310nm Single-mode Laser -8 dBm with FC connector for the UTIL-100/300-DVM Tray. (Delivery 10 weeks) (Requires -DVMAUDIO4000 Audio Adapter)

DVM-4200-FTX-52 Modular, 4 ch. 10 bit Video, 16 Ch. of 24 bit Audio and 4 Ch. Simplex Data, Fiber Optic Transmitter; exceeds RS-250C Short-haul specs. with 1310nm Single-mode Laser -3 dBm with FC connector for the UTIL-100/300-DVM Tray (Delivery 10 weeks) (Requires -DVMAUDIO4000 Audio Adapter)

DVM-4200-FTX-53 Modular, 4 ch. 10 bit Video, 16 Ch. of 24 bit Audio and 4 Ch. Simplex Data, Fiber Optic Transmitter; exceeds RS-250C Short-haul specs. with 1310nm Single-mode Laser +0 dBm with FC connector for the UTIL-100/300-DVM Tray (Delivery 10 weeks) (Requires -DVMAUDIO4000 Audio Adapter)

DVM-4200-FTX-6 Modular, 4 ch. 10 bit Video, 16 Ch. of 24 bit Audio and 4 Ch. Simplex Data, Fiber Optic Transmitter; exceeds RS-250C Short-haul specs. with 1550nm Single-mode Laser +0 dBm with FC connector for the UTIL-100/300-DVM Tray (Delivery 10 weeks) (Requires -DVMAUDIO4000 Audio Adapter) (May require WDM-95)

DVM-4200-FTX-7-xxxx Modular, 4 ch. 10 bit Video, 16 Ch. of 24 bit Audio and 4 Ch. Simplex Data, Fiber Optic Transmitter; exceeds RS-250C Short-haul specs with CWDM 1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm Single-mode Laser 0 dBm with SC connector for the UTIL-100/300-DVM Tray. Supports up to 8 wavelengths or channels per fiber optic cable. (Enter wavelength for xxxx) (Delivery 10 weeks) (Requires -DVMAUDIO4000 Audio Adapter) (May requires CWDM Mux & Demux Accessories)

DVM-4200-FRX-50 Modular, 4 ch. 10 bit Video, 16 Ch. of 24 bit Audio and 4 Ch. Simplex Data, Fiber Optic Receiver; exceeds RS-250C Short-haul specs, Singlemode PIN with FC connectors, Sensitivity -20 dBm for the UTIL-100/300-DVM Tray. (Delivery 10 weeks) (Requires -DVMAUDIO4000 Audio Adapter)

-NOAUDIO No Audio Option, price adjustment for units without the 16 audio channels (subtract $1500 per transmitter or receiver)

Modular Utility Trays, Power Supplies & Accessories for Hydra Series, DVM-4200, DVM-8200 & DIM-8200 (SIN 58-6)

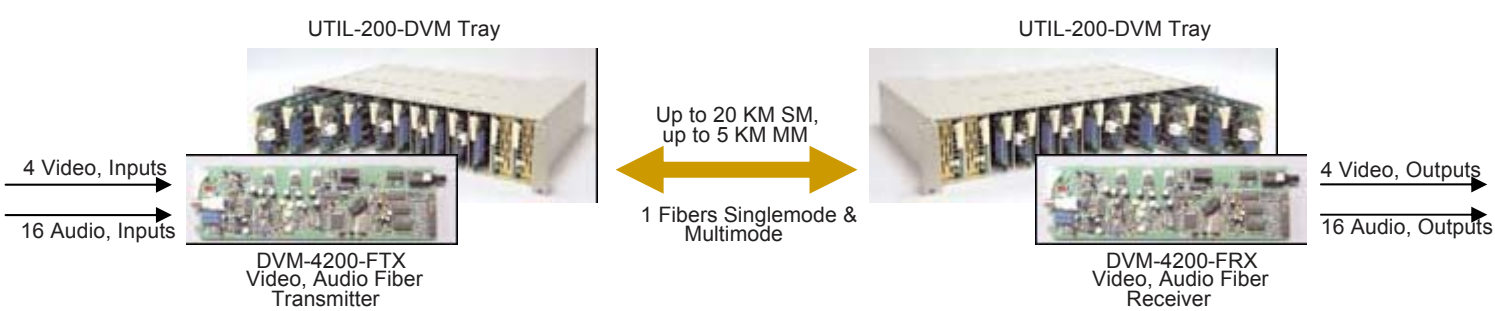
UTIL-100-DVM-2RU-AC Analog, Digital and Fiber, up to 3 Slots, 1 RU, Modular Utility Tray, with one 85-265 VAC Power Supply & Line Cord. Supports the DVM-4200 & DVM-8200 cards. (Delivery 10 weeks)

PS-100-DVM-AC Modular 85-265 VAC Power Supply & Line Cord for 200 series trays (Delivery 10 weeks)

-DVMAUDIO4000 Audio Interface Panel for screw terminal interface for up to 48 balanced audio ch. and up to 12 ch. simplex data to support up to 3 DVM-4200 cards in the UTIL-100-DVM Tray (Delivery 10 weeks)

-DVMAUDIO8000 Audio Interface Panel for screw terminal interface for up to 96 balanced audio ch. and up to 12 ch. simplex data to support up to 3 DVM-8200 cards in the UTIL-100-DVM Tray (Delivery 10 weeks)

Application Diagram for DVM4200 4 Ch. Video and 16 Ch. Audio Fiber Optic Transport System



8 Video and 32 Audio Channel Fiber Optic Link

SUMMARY

The DVM-8200 Video and Audio Fiber Optic Transport provides state-of-the-art performance exceeding RS250C Short-haul and Broadcast Specifications. The system will support 8 video, 32 audio and 4 data channels. A one rack-unit, modular tray will house up to three DVM-4200, DVM-8200 or DIM-8200 cards.
The video Signal to Noise ratio is greater than 75 dB and a Signal to Quantizing Noise ratio of greater than 71 dB. The video bandwidth of 8 MHz support of NTSC, PAL, SECAM and video with diplexed audio carriers at 4.5 MHz, 5.8 MHz and 6.4 MHz.
The Differential Gain and Phase is less than of 0.3% and 0.3°, respectively. The DVM-4000 supports 24 Bit Stereo Audio flat from 20 to 20K Hz with S/N greater than 90 dB and THD less than 0.05%.
The systems supports 110/220 VAC and optionally for 48 VDC.
The Optical budget exceeds 30 dBm. The system is available with 1310nm and 1550nm wavelength Lasers for WDM application. Coarse-Wave Division Multiplexing is available with 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610nm wavelength Lasers.
Applications include links from studio to transmitter (STL), studio to studio, studio to CATV head- end, distance learning, satellite up and down links, common carrier transport, Telco circuits, distance learning, Intelligent Transportation Systems and back-haul feeds from special events.Lasers.

- 10 Bit Video with a Signal to Noise ratio greater than 68 dB and a Signal to Quantizing Noise ratio 69 dB.
- Video Bandwidth of 7 MHz for support of NTSC, PAL, SECAM and video with diplexed audio carriers at 4.5 MHz, 5.8 MHz and 6.4 MHz
- Differential Gain and Phase of 0.3% and 0.3°.
- Optical budget of up to 30 dB for Single-mode.

FTTH CATV Optical Receiver

COMPATIBLE WITH: CTV-2000-FTX

SUMMARY

CTV-2000-FRX Optical Receiver is designed for FTTH broadband ana- log or digital CATV services. Working at extremely low optical input power, CTV-2000-FTX still generates excellent CATV signals.

-High Linearity Photodiode

-1000MHz Bandwidth -

Low noise GaAs Amplifier

-Compact Housing

-5V DC External Power Supply

SPECIFICATIONS

Input Optical Wavelength	1000~1600 nm
Working Optical Power	-2 ~ -8 dBm
Optical Connector	SC/APC
Optical Return Loss	60 dB
Input Optical Power Test	1 V/mW
RF Bandwidth	45 ~ 1000 MHz
RF Connector	Metric F or American F
RF Output Impedance	75 Ohm
RF Output Level	20dBmV @ -5dBm input optical Power
RF Flatness	+/- 0.75dB
RF Return Loss	>16 dB
CNR	>48 dBc @ -5dBm input optical Power
CSO	<-70 dBc @60ch PAL-D
CTB	<-60 dBc @60ch PAL-D
Power Supply	+5 V DC, Power Adapter Meet UL or CE or PSE or CCC
Power Consumption	< 1W
Working Temperature	-40 ~ +60C
Dimension (L*W*H)	87.8mm ~71mm ~25.1mm
Weight	0.13 Kg (not including power adapter)

ORDERING INFORMATION

CTV-2000-FRX: FTTH CATV Optical Receiver

45~862MHz CATV forward path transmitter

COMPATIBLE WITH: CTV-2000-FRX

SUMMARY

CTV-2000 series 1310nm transmitter is primarily used for CATV, 110 channel video signal, digital TV signal, telephone voice signal and data signal, long-distance fiber transmission. The transmitter utilizes a high linearity DFB laser, RF power digital automatic process technique, along with RF pre-distortion circuit. The built-in microprocessor monitors the transmitters working status and auto- matically insures optimum performance. All materials used in CTV-2000 optical transmitter meet RoHS requirement.

-Low noise high linearity Ortel-Emcore cooled DFB laser

-GaAs Technology up to 1000MHz (typical 862MHz)

-RF power digital automatic process technology control the laser driving RF power level automatically, according to RF signal level and channels, ensuring the best C/N, CTB and CSO

-Excellent pre-distortion technology improves CTB, CSO and C/N

-Built-in microprocessor accurately monitor laser output power and temperature.

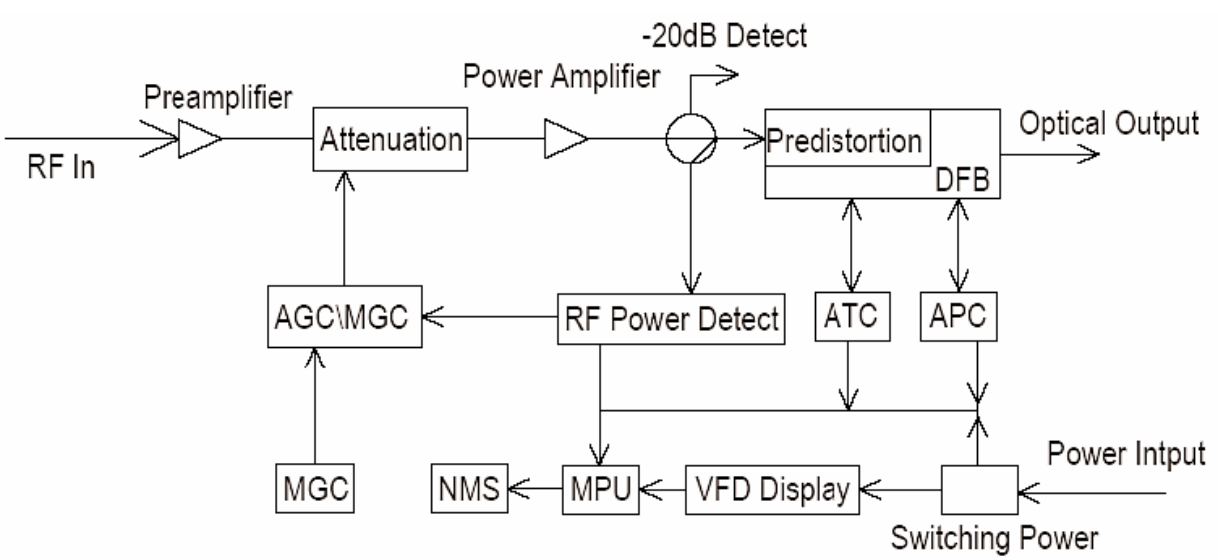
-Front panel VFD displays the status parameters and function message

-19” 1U standard rack with RS485 and RS232 ports for remote monitor and control

-SNMP network management optional

-RoHS compatible

BLOCK DIAGRAM



SPECIFICATIONS

Item	Unit	Parameter
Optical Power	mW	4 6 8 10 12 14 16 18 20
Optical Link Path Loss	dB	7 9 10 11 11.8 12.5 13 13.6 14
Optical Wavelength	nm	1310 +/- 20
Type of Laser		Cooled DFB laser with isolator
Optical modulation mode		Direct Modulation
Optical connector Type		SC/APC or FC/APC
Frequency Range	MHz	47~862 (1000MHz Optional)
RF Input Level	dBmV	15~25
Flatness In Band	dB	+/- 0.75
RF Input Impedance	Ohms	75
Input Reflection Loss	dB	= or > 16 (47~862/1000)MHz
C/CTB	dB	= or > 67
C/CSO	dB	= or > 62
C/N	dB	= or > 51
AGC Control Range	dB	+/- 5
MGC Control Range	dB	+/- 5
Power Voltage	V	AC 90V~265V (50/60 Hz)
Power Consumption	W	15
Operation Temperature	C	0~50
Store Temperature	C	-40~85
Relative Humidity	%	Max 95% no condensation
Dimension	mm	483 (L) x 381 (W) z 44 (H)
Weight	Kg	5

Test Condition: Input 59 channels PAL-D signal to the opticaltransmitter and measure the standard optical receiver C/CTB, C/CSO and C/N in conditions of -1dBm optical input (10km fiber + optical attenuator) and 36 dBmV RF output.

ORDERING INFORMATION

CTV-2000-FTX-AB-CD-EF-G Forward Path Transmitter

AB: Optical output power in mW, 04/06/08/10/12/14/16/18/20
CD: Optical connector, FC for FC/APC, SC for SC/APC
EF: None for 862MHz, 1000 for 1GHz bandwidth
G: None for RS-232 interface, N for SNMP interface

6 Channel, AES/EBU, Digital Audio Fiber Optic Multiplexer

SUMMARY

- Supports 8 AES/EBU digital audio channels (16 mono) and 2 Simplex RS232, RS422 or RS485 data channels over one optical fiber.
- System supports up to 2 AES/EBU 75 Ohm Un-balanced and up to 6 AES/EBU 110 Ohm Balanced signals.
- Supports up to 96 KHz sampling rates.
- Audio and Optical front panel status indicators with dry alarm relay contacts.
- Modular configurations with all optical wavelengths, LED Multimode and Laser Single-mode.
- Coarse Wave-division Multiplexing (CWDM) systems are available for up to 8 wavelengths over *ONE* optical fiber.
- Optical budget of up to 30 dB for Single-mode.
- Universal AC operation for 85-265 VAC and Telco DC operation for 48 VDC.
- Now support analog video, analog audio, serial digital video and digital audio in the same tray. The UTIL-200-DVM Tray supports the DVM-2200 Video, 6 Audio and 3 Data Transport Cards, the DTV-220/230 SDI Transport Cards, the DTV-201/210F SDI Fan-out and Reclocking Cards, the DAM-2200 6 Audio and 3 Data Transport Cards and the AES-2200 6 AES/EBU and 3 Data Transport Cards.
- Applications include links from studio to transmitter (STL), studio to studio, studio to CATV head-end, common carrier, RBOC Telco circuits, distance learning, Intelligent Transportation Systems & back-haul feeds from special events.

SPECIFICATIONS

Inputs

Balanced, AES3.
Input Impedance ..... 110 Ohms, +/-20%, 0.1MHz to 6.0MHz.
Minimum Input Signal ..... 200mV for 50% of cell period.
Maximum Input Signal ..... 10 Vpp.
Unbalanced AES-3 ID
Input Impedance ..... 75 Ohms, +/-5%, (IEC958).
Minimum Input Signal ..... 320mV for 50% of cell period.
Maximum Input Signal ..... 1VppV, +/-20%.
Return Loss ..... >15dB, 0.1 to 6.0MHz.

Outputs

Balanced, AES3.
Output Impedance ..... 110 Ohms, +/-20%, 0.1MHz to 6.0MHz.
Output Voltage..... 2.0 to 7.0 Vpp into 110Ohms.
Rise/Fall Time..... 5 to 30 ns (10% to 90%).
Jitter ..... <20ns.
Unbalanced, AES-3ID.
Output Impedance ..... 75 Ohms, +/-20%, 0.1MHz to 6.0MHz.
Output Voltage..... 1.0 Vpp, +/-20% into 75Ohms.
DC Offset ..... <50mV.
Jitter ..... <20ns.
Return Loss ..... >15dB, 0.1 to 6.0MHz.

Data

Data channels..... 2 selectable, RS232C, RS422 or RS485
Baud..... 9600
Power dissipation..... < 2 Watts, per unit
AC operation..... 85 to 265 VAC (optional 48VDC)
Operating temperature..... 0 to +50 °C
Specifications subject to change without notice.

ORDERING INFORMATION

Multimode:

AES-2200-FTX-2 6 ch. AES Audio and Data Fiber Optic Transmitter, 1300 nm Multimode with ST connector, modular for UTIL-200-DVM Tray.
AES-2200-FRX-2 6 ch. AES Audio and Data Fiber Optic Receiver, Multimode, modular for UTIL-200-DVM tray.

Singlemode:

AES-2200-FTX-50 6 ch. AES Audio & Data Fiber Optic Transmitter, 1300 nm Single-mode with FC connector, modular for UTIL-200-DVM Tray.
AES-2200-FTX-6 6 ch. AES Audio & Data Fiber Optic Transmitter, 1550 nm Single-mode with FC connector, modular for UTIL-200-DVM Tray.
AES-2200-FTX-7-xxxx 6 ch. AES Audio and Data Fiber Optic Transmitter, CWDM 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm Single-mode Laser ñ8 dBm, FC connector, modular for UTIL-200-DVM Tray.

AES-2200-FRX-50 6 ch. AES Audio and Data Fiber Optic Receiver, modular for UTIL-200-DVM Tray.

Modular Utility Trays and Power Supplies & Accessories

UTIL-200-DVM-2RU-AC Analog, Digital and Fiber, up to 10 Slots, 2RU, Modular Utility Tray, with one 85-265 VAC Power Supply & Line Cord. Supports the DVM-2200 & DTV-220/230 SDI cards.

PS-200-DVM-AC Modular 85-265 VAC Power Supply & Line Cord for 200 series trays
UTIL-200-DVM-2RU-48VDC Analog, Digital and Fiber, up to 10 Slots, 2 RU, Modular Utility Tray, with one 36-60 VDC Power Supply. Supports the DVM-2200 & DTV-220/230 SDI cards.

PS-200-DVM-48VDC Modular 36-60 VDC Power Supply for 200 series trays

-DVMAUDIO Audio screw terminal break-out adapter
-DVMXLR XLR Audio Adapter

CWDM-2000-8 Coarse Wave Division Multiplexer for 1470, 1490, 1510, 1530, 1550, 1570, 1590 and 1610nm. Supports up to 8 wavelengths or channels per fiber optic cable

CWDM-2000-4 Coarse Wave Division Multiplexer for 1550, 1570, 1590 and 1610nm. Supports up to 4 wavelengths or channels per fiber optic cable

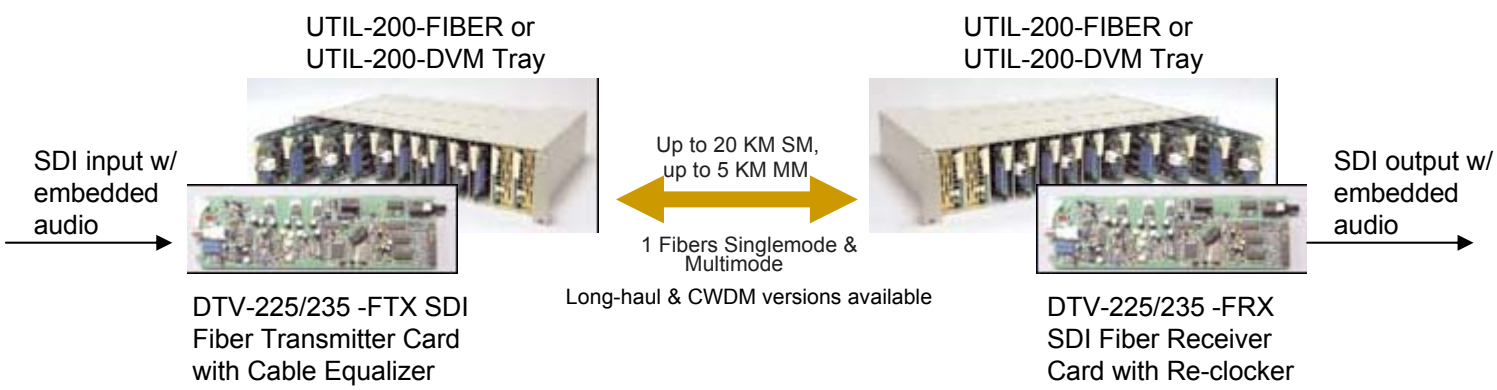
WDM-95-SM Wave Division Multiplexer, 1300 nm and 1550 nm Single Mode

540 Mbps SDI Fiber Optic Transport, Modular

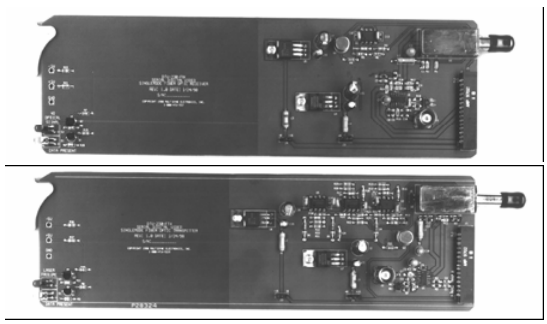
SUMMARY

. Ideal for Serial Digital Interface (SDI) applications at speeds from 19.4 to 540Mbps.
. Supports SMPTE 259M (SDI), DVB-ASI (270Mb/s), 4:2:2 Component, SMPTE 305, SMPTE 310(19.4Mbps) SMPTE 344(540Mbps) & M2S.
. Support embedded data and audio. Audio and data must be embedded externally.
. Available for Multimode (DTV-225) and Singlemode (DTV-235) applications.
. Jitter less than 130psec peak-peak at 270 Mbps.
. Modular card configurations.
. Fan out and reclocking modules available.
. Mix SDI Fan-out, SDI Re-clocking and SDI Fiber Optic Transport in the UTIL-200-FIBER Utility Tray.
. Coarse Wave-division Multiplexing (CWDM) systems are available for up to 16 wavelengths over *ONE* optical fiber.

Application Diagram for DTV225/235 SDI Fiber Optic Transport system



DTV-235-FTX Serial Digital Video Singlemode Fiber Optic Transmitter and DA



. One coaxial input, one Fiber Optic output.
. Economical solution for the transport of digital signals from **19.4 to 540 Mbps** up to **100KM** over Singlemode fiber optic cables.
. Available in 1300nm and 1550nm wavelengths.
. Laser failure and data present LED indicators with open collector alarm output.
. Supports SMPTE 259M, SMPTE 305M, SMPTE310M, SMPTE 344M, M2S and DVB-ASI

Specifications

Input:
Type: 1 BNC.
Impedance: 75 Ohms.
Return Loss:
>18dB up to 270MHz.
Fiber Output: Type: ST or FC.
Wavelength: 1310 or1550nm Singlemode.
Power: -8 to 0 dBm or CWDM Laser.

Ordering Information:

DTV-235-FTX-50-FC	19.4Mbps or 143 - 540Mbps Serial Digital Video Fiber Optic Transmitter, 1310nm, -8dBm, Single-mode Laser -8 dBm with FC connector, Modular for UTIL-200-FIBER and UTIL-200-DVM Trays. Supports SMPTE 259M and SMPTE 310M. (-ST, -FC or SC for connector type)
DTV-235-FTX-52-FC	19.4Mbps or 143 - 540Mbps Serial Digital Video Fiber Optic Transmitter, 1300nm Single-mode Laser -3 dBm, FC conn., Modular for UTIL-200-FIBER and UTIL-200-DVM Trays.
DTV-235-FTX-53-FC	19.4Mbps or 143 - 540Mbps Serial Digital Video Fiber Optic Transmitter, 1300nm Single-mode Laser 0 dBm, FC conn., Modular for UTIL-200-FIBER and UTIL-200-DVM Trays.
DTV-235-FTX-6-FC	19.4Mbps or 143 - 540Mbps Serial Digital Video Fiber Optic Transmitter, 1550nm Single-mode Laser 0 dBm, FC conn., Modular for UTIL-200-FIBER and UTIL-200-DVM Trays.
DTV-235-FTX-7-SC-XXXX	19.4Mbps or 143 - 540Mbps Serial Digital Video Fiber Optic Transmitter with CWDM 1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm Single-mode Laser 0 dBm with SC connector. Supports up to 8 wavelengths or channels per fiber optic cable. Modular for UTIL-200-FIBER and UTIL-200-DVM Trays. (Enter wavelength for xxxx) (May requires CWDM Mux & Demux Accessories)

DTV-235-FRX Serial Digital Video Fiber Optic Receiver and DA

. One Fiber Optic input and two coaxial outputs.
. Optical signal and data presence LED indicators with open collector alarm output.
. Used with the DTV-235-FTX.

Specifications

Fiber Input:
Type: ST or FC.
Wavelength: 1100 to 1610nm.
Sensitivity: -28 dBm.
Output:
Type: 2 BNC.
Return loss: >18dB up to 270MHz.

Ordering Information:

DTV-235-FRX-FC	19.4Mbps or 143 - 540Mbps Serial Digital Video Fiber Optic Receiver, 1100 to 1600nm, –25dBm sensitivity, Single-mode with FC connector, **Modular for UTIL-200-FIBER and UTIL-200-DVM Trays.** Supports SMPTE 259M and SMPTE 310M. (-ST, -FC or –SC for connector type)

DTV-225-FTX Serial Digital Video Multimode Fiber Optic Transmitter and DA

. One coaxial input, one Fiber Optic output.
. Economical solution for the transport of digital signals up to 360Mbps over Multimode fiber optic cables.
. Up to a 10 dBm optical budget at a wavelength of 1330nm.
. Supports SMPTE 259M, SMPTE 305M, SMPTE310M, and DVB-ASI.

Specifications

Input:
Type: 1 BNC.
Impedance: 75 Ohms.
Return Loss: >18dB up to 270MHz.
Fiber Output:
Type: ST
Wavelength: 1310 Multimode.
Power: -14 dBm typical.

Ordering Information:

DTV-225-FTX-ST 19.4Mbps or 143 - 270 Mbps Serial Digital Video Fiber Optic Transmitter, 1310nm, -14dBm, Multi-mode LED with ST connector, **Modular for the UTIL-200-FIBER and UTIL-200-DVM Trays**. Supports SMPTE 259M and SMPTE 310M.

DTV-225-FRX Serial Digital Video Fiber Optic Receiver and DA

. One Fiber Optic input and two coaxial outputs.
. Used with the DTV-225-FTX.

Specifications

Fiber Input:
Type: ST or FC.
Wavelength: 1310nm.
Sensitivity: -24 dBm typical.
Output:
Type: 2 BNC.
Return loss: >18dB up to 270MHz.

Ordering Information:

DTV-225-FRX-ST 19.4Mbps or 143 - 270 Mbps Serial Digital Video Fiber Optic Receiver, –24dBm sensitivity, Multi-mode with ST connector,
Modular for the UTIL-200-FIBER and UTIL-200-DVM Trays. Supports SMPTE 259M and SMPTE 310M.

Tray and Power Supply Ordering Information:

UTIL-200-FIBER-2RU-AC Analog, Digital and Fiber, 10 Slot, 2RU, Modular Utility Tray, with one 85-265 VAC Power Supply & Line Cord. (Supports the DTV200 series only)
PS-200-AC Modular 85-265 VAC Power Supply & Line Cord for 200 series trays
UTIL-200-FIBER-2RU-48VDC Analog, Digital and Fiber, 10 Slot, 2 RU, Modular Utility Tray, with one 36-60 VDC Power Supply. (Supports the DTV200 series only)
PS-200-48VDC Modular 36-60 VDC Power Supply for 200 series trays
UTIL-200-DVM-2RU-AC Analog, Digital and Fiber, 10 Slot, 2RU, Modular Utility Tray, with one 85-265 VAC Power Supply & Line Cord. (Supports the DTV200 and DVM2200 series only)
PS-200-DVM-AC Modular 85-265 VAC Power Supply & Line Cord for 200 series trays
UTIL-200-DVM-2RU-48VDC Analog, Digital and Fiber, 10 Slot, 2 RU, Modular Utility Tray, with one 36-60 VDC Power Supply. (Supports the DTV200 and DVM2200 series only) (Delivery 10 Weeks)
PS-200-DVM-48VDC Modular 36-60 VDC Power Supply for 200 series trays (Delivery 10 Weeks)

Firewire, IEEE 1394A/B, Fiber Optic Transport

SUMMARY

Compatible with IEEE 1394 A/B protocol. Singlemode and Multimode versions available. Full duplex.

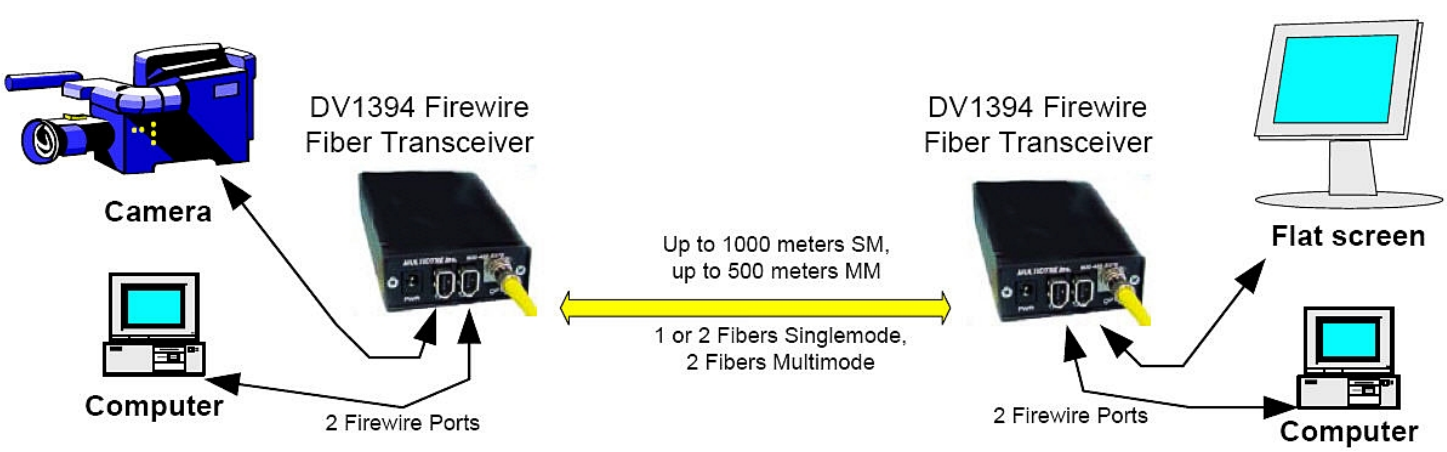
Supports 100 and 200 M Baud data rates. Distance up to 1KM.

Adapters for ST, FC and SC.

Singlemode units available in one or two fiber solutions. Rack or standalone configuration.

The DV-1394 is designed for full duplex transmission of Firewire (IEEE 1394) signals over Singlemode or Multimode fiber optic cable. Perfect for today's professional and consumer applications. No special drivers or set up needed and it is transparent to Firewire peripherals. The unit is compliant with IEEE-1394A-2000 and IEEE-1394B specifications.

Applications include video production, video editing, ENG, computer networking and transport links for STL, studio to studio and studio to CATV head-end.



SPECIFICATIONS

Format (100 and 200M Baud) ..... IEEE1394A-2000, IEEE1394B draft
Electrical Port ..... 2x 6 pin IEEE1394 Copper Ports
Optical Port..... 1x IEEE1394B Long Haul Optical Port
Optical Power, Multimode ..... -19 dBm
Optical Sensitivity, Multimode ..... -28 dBm
Optical Power, Singlemode ..... -15 dBm
Optical Sensitivity, Singlemode ..... -28 dBm
Optical Power, WDM Singlemode ..... -8 dBm
Optical Sensitivity, WDM Singlemode ..... -23 dBm
Power Dissipation..... < 2 Watts, per unit
AC operation, wall-mount supply..... 110 or 220 VAC
DC operation ..... 7 to 14 VDC
Operating temperature ..... 0 to +70 °C
Extended Operating temperature ..... -40 to +75 °C
Stand-alone unit ..... 5.9” L x 2.75” W x 1.2” H
6 unit rack-mounting kit (Part number –RM6): ..... 5.9” L x 19” W x 1.75” H
Specifications subject to change without notice.

ORDERING INFORMATION

DV-1394-FMX-2	Firewire DV/IEEE 1394 Fiber Optic Transceiver, Multi-mode, 500 meters, 1310nm LED -19dBm, 1310nm PIN, -28 dBm sensitivity, dual LC or MT-RJ connector, Stand-alone & Rack-mountable, wall-mount power supply included. Requires 2 Multimode fibers. (Requires 2 units for 1 link)
DV-1394-FMX-50	Firewire DV/IEEE 1394 Fiber Optic Transceiver, Single-mode, 1 KM, 1310nm Laser -15 dBm, 1310nm PIN, -28dBm sensitivity, dual LC or MT-RJ connector, Stand-alone & Rack-mountable, wall-mount power supply included. Requires 2 Singlemode fibers. (Requires 2 units for 1 link)
DV-1394-FMX-WDM-35	Firewire DV/IEEE 1394 Fiber Optic Transceiver, WDM, Singlemode, 1 KM, 1310 Laser -8dBm, 1550nm PIN, -23dBm sensitivity, one FC connector, Stand-alone & Rack-mountable, wall-mount power supply included. Requires 1 Singlemode fiber. (Requires 2 units for 1 link)
DV-1394-FMX-WDM-53	Firewire DV/IEEE 1394 Fiber Optic Transceiver, WDM, Singlemode, 1 KM, 1550nm Laser -8dBm, 1310nm PIN, -23dBm sensitivity, one FC connector, Stand-alone & Rack-mountable, wall-mount power supply included. Requires 1 Singlemode fiber. (Requires 2 units for 1 link)

Rack-mount Kits and Accessories

-RM6	6 unit rack-mounting kit, mount 6 DTV-100/1500 in 1 rack unit
-RM12	12 unit rack-mounting kit, mount 12 DTV-100/1500 in 2 rack unit
-BLANK	Blank panel for rack-mounting kit
DV-CABLE-500-2	500 meter Duplex Multimode Fiber Optic Cable for DV1394-FMX-2, LC connectors
DV-CABLEP-500-2	500 meter Duplex Multimode Plenum Fiber Optic Cable for DV1394-FMX-2, LC connectors
DV-CABLE-1K-50	1000 meter Duplex Singlemode Fiber Optic Cable for DV1394-FMX-50, LC connectors
DV-CABLEP-1K-50	1000 meter Duplex Singlemode Plenum Fiber Optic Cable for DV1394-FMX-50, LC connectors
DV-LC-ST-2	LC to ST, Multimode, Adapter Cable for DV1394-FMX-2
DV-LC-ST-50	LC to ST, Singlemode, Adapter Cable for DV1394-FMX-50
DV-LC-FC-50	LC to FC, Singlemode, Adapter Cable for DV1394-FMX-50

Designed and manufactured in the U. S. A.

5 to 1485 MBps SDI & HD-SDI Fiber Optic Transport, Stand-alone or Rack-mount

Small, Compact with Re-clocked, Loop-Through Input and Dual Re-clocked Outputs

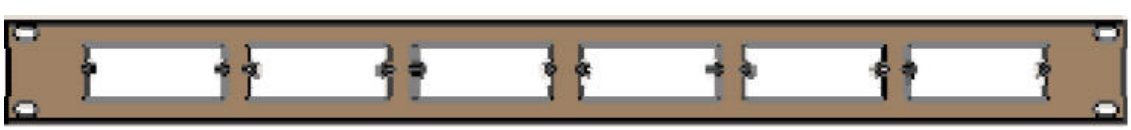
SUMMARY

- An economical solution for the **fiber optic transport** of 5 Mbps to **1.5 Gbps HDTV signals**.
- Supports the **SMPTE 292M 1.485 Gbps standard.**
- Supports the SMPTE 259M standards with operation from 143Mbps - 360Mbps.
- Supports the SMPTE 310M 19.4Mbps, M2S or DVB-ASI 270Mbps, SMPTE 344M 540Mbps and SMPTE 305M SDTi rates.
- Supports embedded audio and data. Audio and data must be embedded externally.
- Input Port with Re-clocked and Buffered Loop-through
- Dual Re-clocked Outputs
- Stand-alone ideal as a Throw Down for Field Applications
- Rack-mountable with Optional –RM6
- 6 Units will mount in 1 Rack-Unit
- Singlemode link distance up to 24KM at 1.485Gbps
- Multimode operation typically more than 200 meters
- Small rugged portable configuration.
- Available with ST, LC or FC optical connectors.
- Error free pathological pattern operation.
- External Battery operation from 5 to 16 VDC.
- Wall-mount power supply included, 5 VDC.

DESCRIPTION

The MHD-1500 is an economic solution designed for transmission of SDI and HD-SDI TV signals on single mode fiber optic cable. Perfect for today's professional and broadcast applications. Stand alone or rack card configurations simplify mounting.

Applications include video production, video editing, ENG, computer networking and transport links for STL, studio to studio and studio to CATV head end.



6 Units will mount in 1 Rack-Unit, Option -RM6

SPECIFICATIONS

HD-1500-FTX-50-ST

1.5 Gbps, Multirate, Serial Digital Video Fiber Optic Transmitter

. **Unit I/Os:**
- One coaxial input,
- One re-clocked loop-through,
- One fiber optic output
- One 5 . 16 VDC power port.

. LED indicators for Data Rate, HD, Lock and Power

Specifications

Input
Type: 1 BNC.
Impedance: 75 Ohms.
Return Loss: >18dB up to 270MHz.
Output: 1 BNC Re-clocked Loopthrough Output.
Fiber Output: Type: ST, LC or FC.
Wavelength: 1310 Singlemode or Multimode.
Power: -12 dBm

HD-1500-FRX

1.5 Gbps, Multirate, Serial Digital Video Fiber Optic Receiver

.
Unit I/Os:
- One fiber optic input
- Two re-clocked coaxial outputs
- One 5 . 16 VDC power port.

. LED indicators for Data Rate, HD, Lock and Power

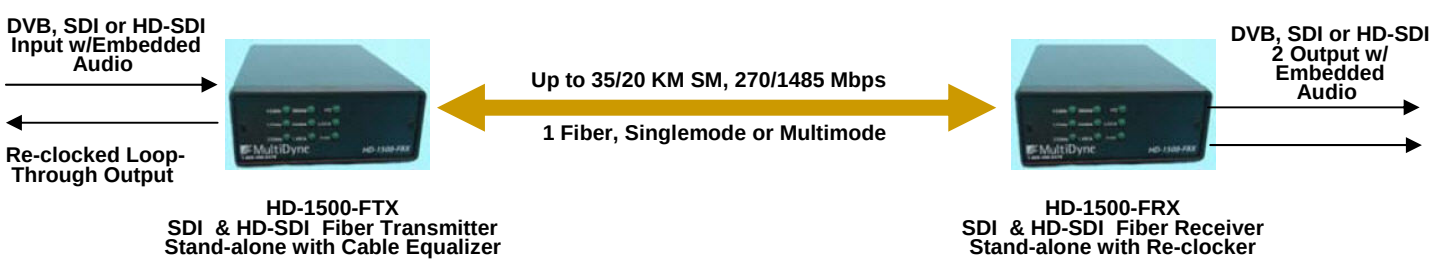
Specifications

Fiber Input
Type: ST, LC or FC.
Wavelength: 1310nm.
Sensitivity: -20 dBm.
Output
Type: 2 BNC.
Return loss: >18dB up to 270MHz.

ORDERING INFORMATION

	FIBER OPTICS, 1.485 Gbps Serial Digital Transport for HDTV, Stand Alone:
HD-1500-FTX-50-ST	1.5 Gbps Multirate Serial Digital Video Fiber Optic Transmitter, 5 - 1485 Mb/s, DVB/ASI, SMPTE 292M/259M/310m, 1310nm Single-mode Laser, -12 dBm, 20 KM, Stand-alone & Rack-mountable, wall-mount power supply included. (May require -RM6 & -BLANK) (Includes wall-mount power supply) (Specify ST, LC or FC Connectors)
HD-1500-FRX-50-ST	1.5 Gbps Multi-rate Serial Digital Video Fiber Optic Receiver, 5 - 1485 Mb/s, DVB/ASI, SMPTE 292M/259M/310M, Re-clocker, 1310nm Singlemode, -20 dBm sensitivity with ST connector, Stand-alone & Rack-mountable, wall-mount power supply included. (May require -RM6 & -BLANK) (Includes wall-mount power supply) (Specify ST, LC or FC Connectors)
	Rack-mount Kits and Accessories (SIN 58-6)
-RM6	6 unit rack-mounting kit, mount 6 DTV-100/1500 in 1 rack unit
-BLANK	Blank panel for rack-mounting kit

Application Diagram for HD-1500 SDI & HD-SDI Fiber Optic Transport System


DVB, SDI or HD-SDI Input w/Embedded Audio
Re-clocked Loop-Through Output
Up to 35/20 KM SM, 270/1485 Mbps
1 Fiber, Singlemode or Multimode
DVB, SDI or HD-SDI 2 Output w/ Embedded Audio
HD-1500-FTX
SDI & HD-SDI Fiber Transmitter
Stand-alone with Cable Equalizer
HD-1500-FRX
SDI & HD-SDI Fiber Receiver
Stand-alone with Re-clocker

DVI Fiber Optic Extension Cable

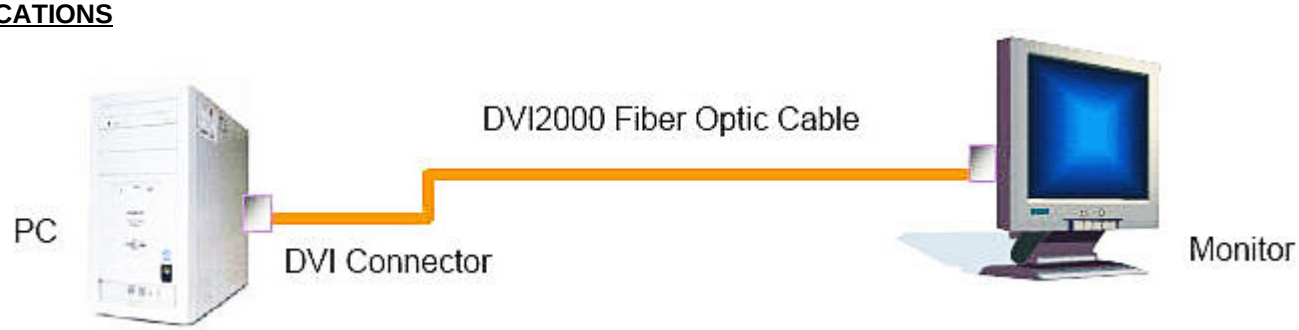
SUMMARY

• Transport DVI-D signals over ***ONE*** **fiber optic cable.**
• Fully compatible with DVI standard by DDWG use of standard DVI-D connector
• Requires **5 VDC at 0.5 Amps** on pin 14 of DVI source connector; Check maximum current specifications with manufacturer.
• **1600 x 1200 Resolution.**
• **Available in lengths from 10 to 100 meters.**
• R, G, B, Clock signal is transmitted by optical fiber
• DDC signal and 5V power line is transmitted by copper line
• Standard Cable - Riser type, UL 1666
• No EMI characteristics for medical instruments and airplane
• Enables remoting of a monitor from the video source.
• Supports all possible horizontal and vertical synch configurations.
• Provides electrical isolation, immune to electrical noise in the transmission path
• Systems available with **Keyboard, Mouse and Audio support.**
• Application include commodity and stock exchanges, medical and MRI displays, advertising and signs, sporting and concert video displays, video walls, digital cinema, radar displays, air traffic control, military information displays plus many more…

DESCRIPTION

The DVI-2000 is ideally suited to sending high quality, high resolution (up to 1600 X 1200) digital video over fiber. This unique fiber optical cable system let your digital LCD monitor extend up to 150 meter or 492 feet away from host without any external power supply based on DVI standard.
Applications include plasma displays, video walls for advertising, MRI and medical display and radar displays.

APPLICATIONS



SPECIFICATIONS

Frequency Bandwidth..... 1.65Gbps (Single Link)
Supporting Graphic Resolution & Distance..... UXGA resolution (1600 x 1200) 60Hz 150m(490ft)
Connectors..... DVI Digital 24pin Plug
Power Consumption..... Transmitter : 0.53 watt
Receiver : 0.56 watt
(5 VDC at 0.5 Amps required on Pin 14)
Bending Radius..... 70mm
OPTICAL
Optical Source:..... 850nm VCSEL
O/E Converter: ..... PIN Photo Diode
Fiber: ..... H-PCF Graded Index Multi-mode Fiber
ENVIRONMENTAL
Operating Temperature Range: ..... 0 to 50 C
Storage Temperature Range:..... -20 to 70 C

SIGNAL PIN ASSIGNMENTS

- Model : **DVI-2000** Fully compatible with DVI1.0 including DDC and hot plug detection

Pin	Signal Assignment	Pin	Signal Assignment	Pin	Signal Assignment
1	T.M.D.S. Data2-	9	T.M.D.S. Data1-	17	T.M.D.S. Data0-
2	T.M.D.S. Data2+	10	T.M.D.S. Data1+	18	T.M.D.S. Data0+
3	T.M.D.S. Data2 Shield	11	T.M.D.S. Data1 Shield	19	T.M.D.S. Data0 Shield
4	No Connect	12	No Connect	20	No Connect
5	No Connect	13	No Connect	21	No Connect
6	DDC Clock	14	+5V Power @ 0.5 Amps	22	T.M.D.S. Clock Shield
7	DDC Data	15	Ground (for +5V)	23	T.M.D.S. Clock+
8	No Connect	16	Hot Plug Detect	24	T.M.D.S. Clock-

4 Fiber & 5 Copper line Cable Construction

ORDERING INFORMATION

DVI - 2xxx

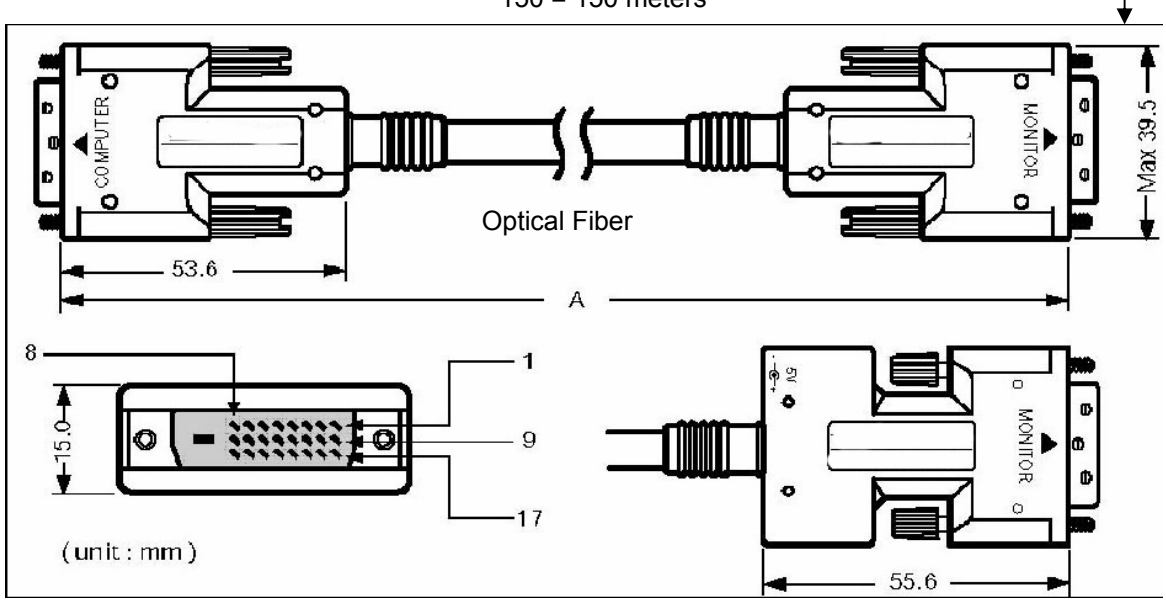
Model Name

4 Fiber & 5 Copper Cable

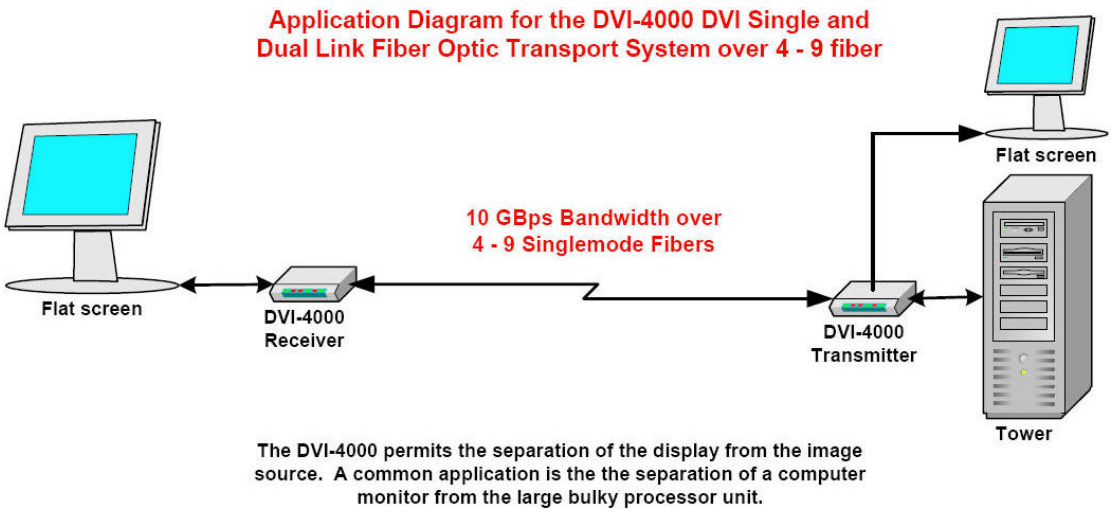
Length see Dim A
010 = 10 meters
020 = 20 meters
030 = 20 meters
050 = 50 meters
060 = 60 meters
070 = 70 meters
080 = 80 meters
090 = 90 meters
100 = 100 meters
150 = 150 meters

DIMENSIONS

DVI Digital Plug
Single Link (24pin)



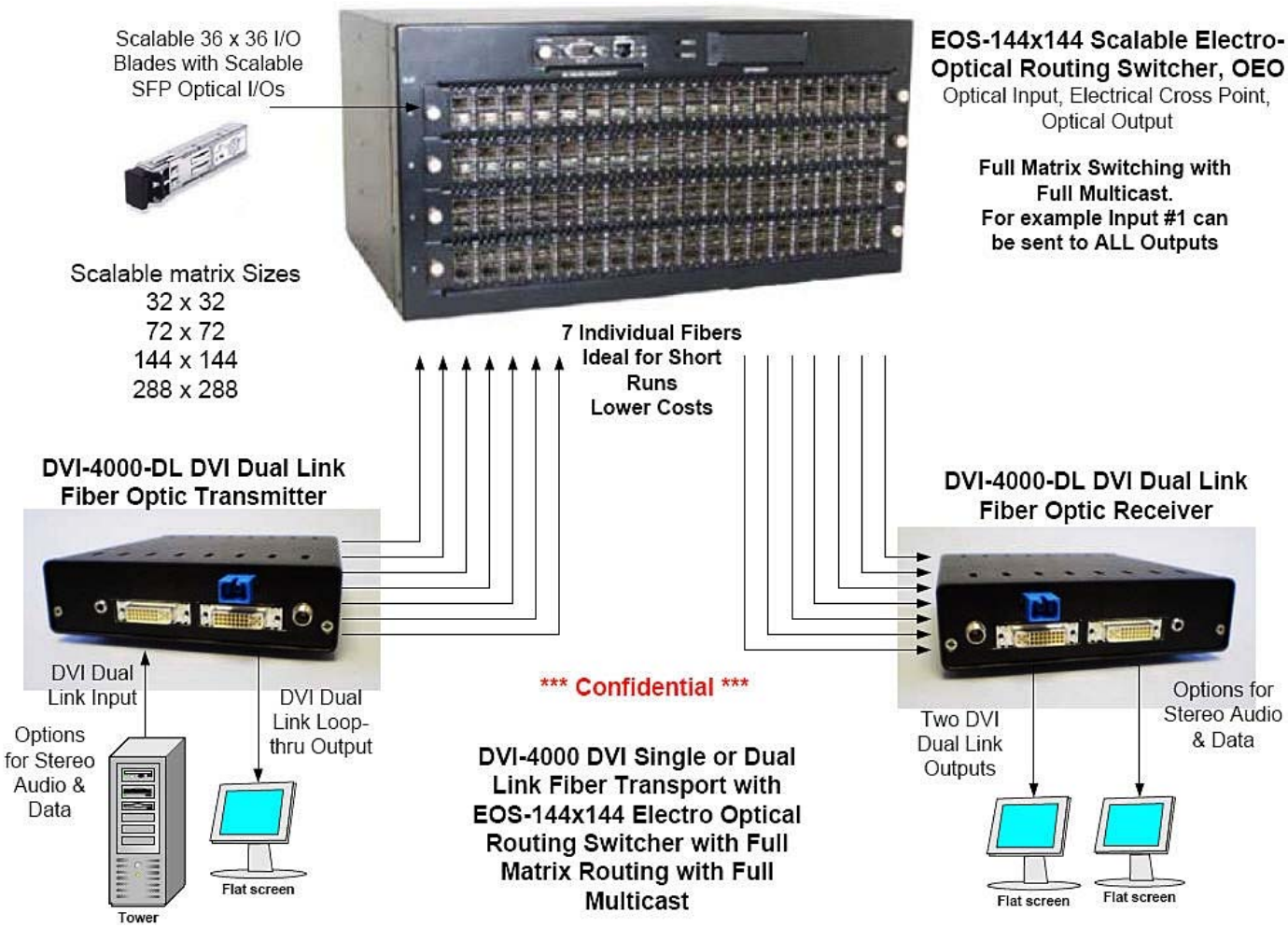
DVI Single & Dual Link, Multiple Fiber, Transport System with Stereo Audio and Data


Application Diagram for the DVI-4000 DVI Single and Dual Link Fiber Optic Transport System over 4 - 9 fiber
Flat screen
10 GBps Bandwidth over 4 - 9 Singlemode Fibers
Flat screen
DVI-4000 Receiver
DVI-4000 Transmitter
Tower
The DVI-4000 permits the separation of the display from the image source. A common application is the the separation of a computer monitor from the large bulky processor unit.

SUMMARY

The NEW DVI-4000 Series provides a long haul, transport solution for high-quality, up to **WQXGA 2560 x 1600,** DVI Single Link and Dual Link video sources via **4 to 9 fiber.** The system also supports stereo audio and bi-directional data for monitor control. The system uses No Compression with no user adjustments or calibration.
The DVI-4000 Series offers a Lower Cost alternative to the DVI-5000 with the same uncompressed video quality.
The DVI-4000 uses multiple fibers which eliminates many of the expensive optical multiplexing components found in the DVI-5000 while maintaining the same performance.
The DVI-4000 Series supports fully un-compressed, 100% transparent video transport. The system provides a pixel-for-pixel image transport. The video resolution is 100% 24 Bits for all scan rates with no contouring or bit reduction at high scan rates. The design will support future 3 Gbps chip sets.
The DVI-4000 provides a total through put of up to **10 Gbps**. The system supports up to **2560 x 1600 pixels** over ***ONE*** optical fiber without compression. The system requires non-proprietary Singlemode fiber optic cable with a transport distance of up to 10 KM.
The DVI-4000 transmitter unit supports a loop-through input. The receiver provides two DVI outputs.
The system supports EDID from any monitor. The EDID support is selectable between the loop-through monitor or internal generation on the transmit side.
The MultiDyne EOS Electro-optical Routing Switcher is the only Large Scale switcher on the market to switch DVI Single Link and Dual Link. See the application diagram below showing a typical DVI switching application.

APPLICATIONS


Scalable 36 x 36 I/O Blades with Scalable SFP Optical I/Os
EOS-144x144 Scalable Electro-Optical Routing Switcher, OEO
Optical Input, Electrical Cross Point, Optical Output
Full Matrix Switching with Full Multicast. For example Input #1 can be sent to ALL Outputs
Scalable matrix Sizes
32 x 32
72 x 72
144 x 144
288 x 288
7 Individual Fibers Ideal for Short Runs Lower Costs
DVI-4000-DL DVI Dual Link Fiber Optic Transmitter
DVI-4000-DL DVI Dual Link Fiber Optic Receiver
DVI Dual Link Input
DVI Dual Link Loop-thru Output
Options for Stereo Audio & Data
Tower
Flat screen
*** Confidential ***
DVI-4000 DVI Single or Dual Link Fiber Transport with EOS-144x144 Electro Optical Routing Switcher with Full Matrix Routing with Full Multicast
Two DVI Dual Link Outputs
Options for Stereo Audio & Data
Flat screen
Flat screen

Fiber optic transport provides the capability for the separation of a video signal source and the monitor. For example, a computer or imaging device can be in a different location than the monitors. In many applications space is limited in the monitor area. With flat screen technology, very little space is required. The computers or imaging devices can be in another room.

Systems are available to transport **DVI, HDMI, RGB video** as well as **audio, keyboard** and **mouse control**. Application include commodity and stock exchanges, medical and MRI displays, advertising and signs, sporting and concert
video displays, video walls, digital cinema, radar displays, air traffic control, military information displays plus many more¡¦

Display and Computer Resolution Information for the RGB-5000, RGB-2000, DVI-2000

What is SVGA, XGA and SXGA?

These are the main standards of resolution. The resolution is the number of 'pixels' that the projector is capable of displaying. Pixels are the individual dots that make up the image on your computer.

SVGA, XGA and SXGA are terms that describe common resolutions used by computers and projectors.

WVGA, WSVGA and WXGA are terms that describe common resolutions used by Widescreen (16:9 aspect ratios) home cinema projectors.

The table below shows you the number of pixels that are displayed in each common resolution.

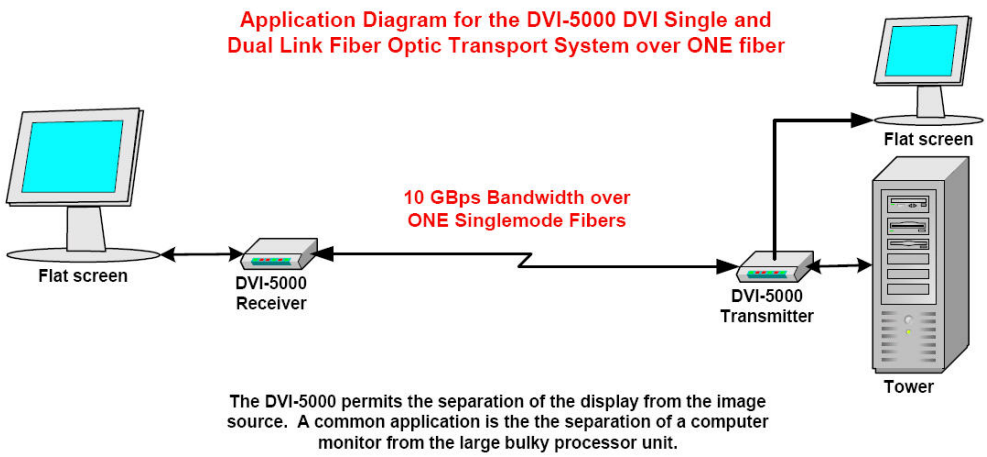
Standard (4:3) resolutions

Resolution	Pixels horizontally	Pixels vertically	Approx. total pixels (thousands)
VGA	640	480	307
SVGA	800	600	480
XGA	1024	768	786
SXGA	1280	1024	1311
UXGA	1600	1200	1920

Widescreen(16:9) resolutions

Resolution	Pixels horizontally	Pixels vertically	Approx. total pixels (thousands)
WVGA	854	480	410
WSVGA	1024	576	590
WXGA	1280	720	922

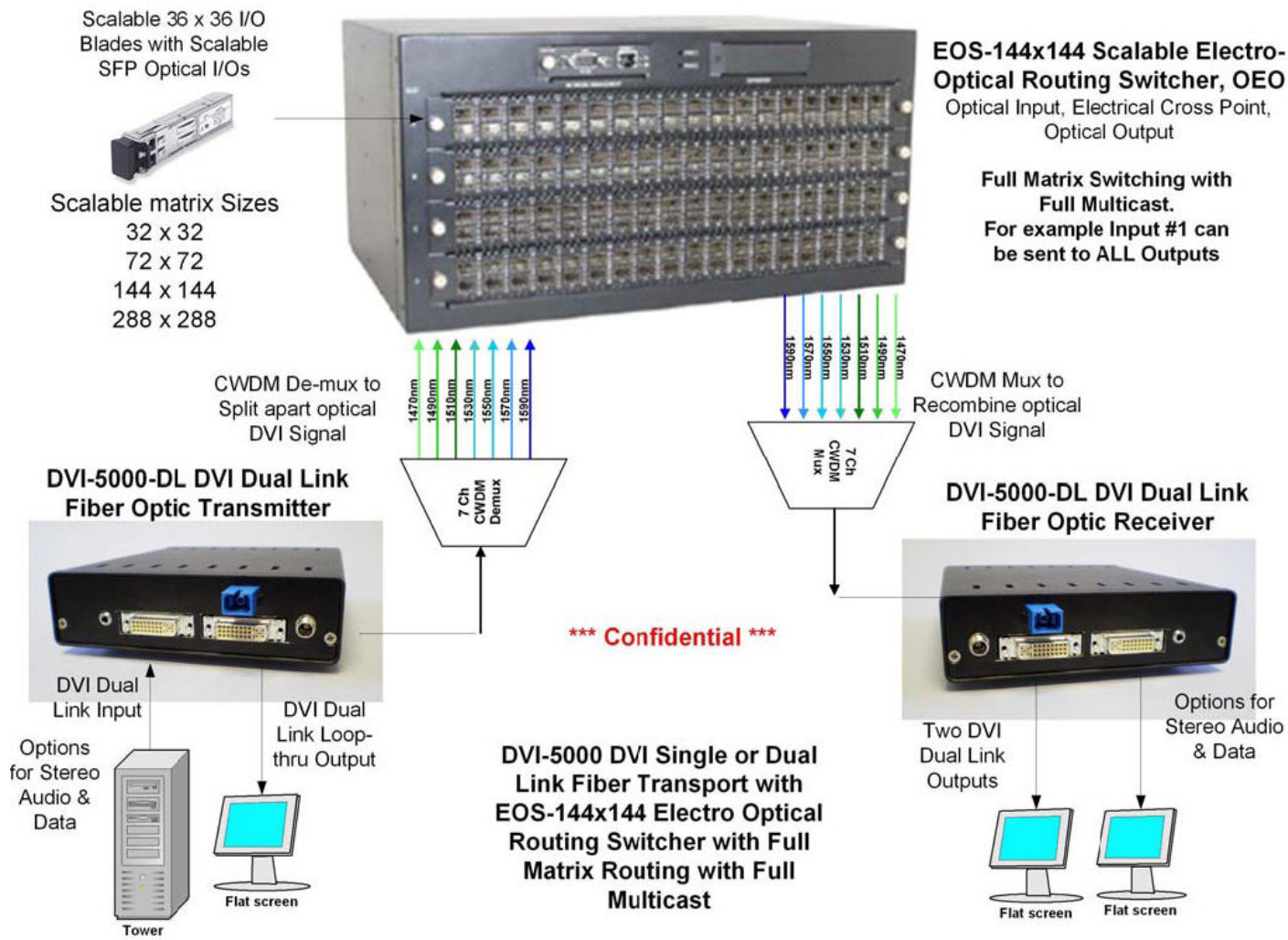
DVI Single & Dual Link, Single Fiber, Transport System with Stereo Audio and Data, DVI-5000


Application Diagram for the DVI-5000 DVI Single and Dual Link Fiber Optic Transport System over ONE fiber
Flat screen
10 GBps Bandwidth over ONE Singlemode Fibers
Flat screen
DVI-5000 Receiver
DVI-5000 Transmitter
Tower
The DVI-5000 permits the separation of the display from the image source. A common application is the the separation of a computer monitor from the large bulky processor unit.

SUMMARY

The NEW DVI-5000 Series provides a long haul, transport solution for high-quality, up to **WQXGA 2560 x 1600,** DVI Single Link and Dual Link video sources via ***ONE* fiber.** The system also supports stereo audio and bi-directional data for monitor control. The system uses No Compression with no user adjustments or calibration.
The DVI-5000 Series supports fully un-compressed, 100% transparent video transport. No frame dropping, every frame is transported. The system provides a pixel-for-pixel image transport.
The video resolution is 100% 24 Bits for all scan rates with no contouring or bit reduction at high scan rates.
The design will support future 3 Gbps chip sets.
The DVI-5000 provides a total through put of up to **10 Gbps**.
The system supports up to **2560 x 1600 pixels** over ***ONE*** optical fiber without compression.
The system requires non-proprietary Singlemode fiber optic cable with a transport distance of up to 10 KM.
The DVI-5000 transmitter unit supports a loop-through input. The receiver provides two DVI outputs.
The system supports EDID from any monitor. The EDID support is selectable between the loop-through monitor or internal generation on the transmit side.
The MultiDyne EOS Electro-optical Routing Switcher is the only Large Scale switcher on the market to switch DVI Single Link and Dual Link. See the application diagram below showing a typical DVI switching application.

APPLICATIONS


Scalable 36 x 36 I/O Blades with Scalable SFP Optical I/Os
Scalable matrix Sizes
32 x 32
72 x 72
144 x 144
288 x 288
EOS-144x144 Scalable Electro-Optical Routing Switcher, OEO
Optical Input, Electrical Cross Point, Optical Output
Full Matrix Switching with Full Multicast.
For example Input #1 can be sent to ALL Outputs
CWDM De-mux to Split apart optical DVI Signal
1470nm
1490nm
1510nm
1530nm
1550nm
1570nm
1590nm
7 Ch CWDM Demux
CWDM Mux to Recombine optical DVI Signal
7 Ch CWDM Mux
DVI-5000-DL DVI Dual Link Fiber Optic Transmitter
DVI-5000-DL DVI Dual Link Fiber Optic Receiver
DVI Dual Link Input
DVI Dual Link Loop-thru Output
Options for Stereo Audio & Data
Tower
Flat screen
*** Confidential ***
DVI-5000 DVI Single or Dual Link Fiber Transport with EOS-144x144 Electro Optical Routing Switcher with Full Matrix Routing with Full Multicast
Two DVI Dual Link Outputs
Options for Stereo Audio & Data
Flat screen
Flat screen

Fiber optic transport provides the capability for the separation of a video signal source and the monitor. For example, a computer or imaging device can be in a different location than the monitors. In many applications space is limited in the monitor area. With flat screen technology, very little space is required. The computers or imaging devices can be in another room.

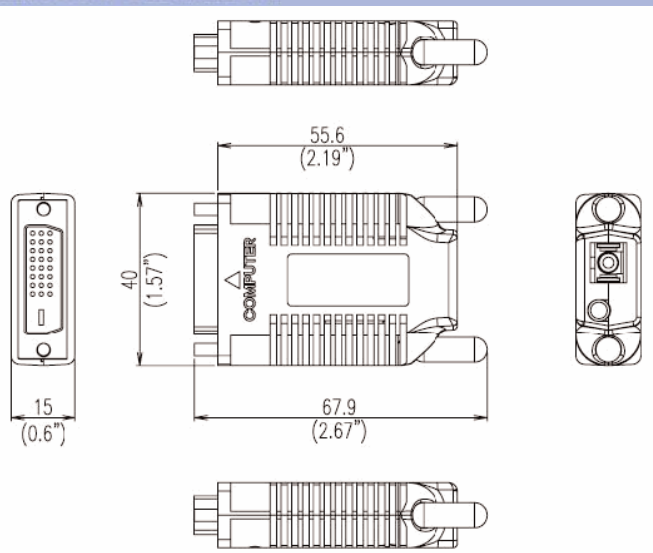
Systems are available to transport **DVI, HDMI, RGB video** as well as **audio, keyboard** and **mouse control**. Application include commodity and stock exchanges, medical and MRI displays, advertising and signs, sporting and concert video displays, video walls, digital cinema, radar displays, air traffic control, military information displays plus many more…

WUXGA, DVI Over ONE Fiber Up to 1,000 Meters (3,300feet)

SUMMARY

-High Speed and long distance transmission by SC type Multi-mode 1(one) Fiber
-Uses Transition Minimized Differential Signaling (TMDS) methods for maximum signal integrity
-Standard DVI plug and SC fiber connector.
-R,G,B,Clock signal is transmitted by 1(one) multimode optical fiber
-Maximum resolution WUXGA 1920 x 1200
-DDC detection function for auto learning EDID Monitor Resolution information.
-Connect TX unit to monitor to learn EDID Resolution Parameters.
-Optional external power supply (Automatic power switch is included.)
-One Power Adapter Included.
Optical Source: 850nm VCSEL
O/E Converter: PIN Photo Diode
Fiber Type: 50 or 62.5/125 SC Multi-mode
Frequency Bandwidth: 1.65 Gbps (Single Link)
Resolution & Distance: WUXGA resolution (1920 x 1200)
1 Km(3,300ft)
Power Consumption: Tx:1.0Watt(max),Rx:1.0Watt(max)
Operating Temperature Range

ORDERING INFORMATION



For Pre-Programmed EDID Monitor Resolution
DVI-ONE-#

 # =
0 - No DDC Check
W - WUXGA
U - UXGA
S - SXGA
X - XGA
G - SVGA
A - VGA

HDMI Fiber Optic Extension Cables

SUMMARY

The HDM-2000 Fiber Optic Extension Cable extends the distance limitations of HDMI digital video signals to 100 meters. Resolutions of up to 1600 by 1200 are support. The system is HDCP compliant with HDMI Adoption. Cables are available in varying lengths from 10 to 100 meters.

Fiber optic transport provides the capability for the separation of a video signal source and the monitor. For example, a computer or imaging device can be in a different location than the monitors. In many applications space is limited in the monitor area. With flat screen technology, very little space is required. The computers or imaging devices can be in another room. Systems are available to transport HDMI, DVI or RGB video as well as audio, keyboard and mouse control. Application include commodity and stock exchanges, medical and MRI displays, advertising and signs, sporting and concert video displays, video walls, digital cinema, radar displays, air traffic control, military information displays plus many more…

500 MHz RGB and VGA Fiber Optic Transport System

SUMMARY

- Transport RGB and XVGA signals plus various configurations of H and V sync over 3 fibers.
- 1600 x 1200 Resolution.
- Horizontal Frequency 15-130 KHz.
- RGB HV, RGsB, YsUV, YcCrCb, VGA, SVGA and UXGA.
- Enables remoting of a monitor from the video source.
- System bandwidth of up to 500 MHz, 165 MHz per component.
- Supports all possible horizontal and vertical synch configurations.
- System has loop-through BNC and HD15 inputs.
- System supports sync on green, CS sync and separate HS and VS sync inputs.
- Intensity modulation.
- Optical budget up to 13 dBm.
- AGC on all colors provides automatic color balance.
- Available in Singlemode ONLY.
- Provides electrical isolation, immune to electrical noise in the transmission path
- Systems available with Keyboard, Mouse and Audio support.
- Available in stand-alone and rack-mount configurations.
- Universal 85-264 VAC power supply.
- Application include commodity and stock exchanges, medical and MRI displays, advertising and signs, sporting and concert video displays, video walls, digital cinema, radar displays, air traffic control, military information displays plus many more…

DESCRIPTION

The RGB-2000 is ideally suited to sending high quality, high resolution (up to 1600 X 1200) component video over fiber. All component formats are supported including RGB, VGA, SVGA etc. Applications include plasma displays, video walls for advertising, MRI and medical display and radar displays.

With the RGB-2000, synch is transmitted on all components to make set up simple. It supports synch on green, CS sync and separate H and V synch. Loop through and HD15 inputs further simplify operation. AGC on all components provide automatic color balance. On single mode versions, keyboard, mouse and stereo audio can be supported on a 4th fiber.

SPECIFICATIONS

VIDEO SIGNAL

Number of Channels: 3
Standards Supported: ..... RGB HV, RGsB, YsUV, YcCrCb, VGA, SVGA, UXGA with TTL H & V sync, Sun and Apple Macintosh with TTL, composite sync, Silicon Graphics with sync on-green
Video Signal: ..... NTSC and PAL, 1.0 V p-p
Input/Output Impedance: ..... 75 Ohms
Scan Rates: Horizontal: ..... 15.75 KHz to 130 KHz
Vertical: ..... 50-150 Hz
Signal-to-Noise Ratio: ..... >60 dB
Video Bandwidth, Singlemode: ..... 165 MHz (1600 H x 1200 V @ 60 Hz)

OPTICAL

Wavelength: Singlemode, RGB-2000-FTX-50: ..... 1310 nm
Optical Budget: ..... 13 dB - 8.3/125 µm fiber
Operating Distance: ..... up to 20 km over 8.3/125 µm
Emitter Type, Singlemode: ..... Laser
Gain Control: ..... Electro-optical automatic gain control (AGC)
Receiver Sensitivity: ..... -28 dBm
Transmitter Power: Singlemode, RGB-2000-FTX-50: ..... -8 dBm, 8.3/125 **(may require attenuators for short distances)**
Dimensions: (L x W x H) ..... 5 ½ x 19 x 1 ¾
Power consumption: ..... 15 Watts
Operating temperature..... 0 to +50 °C
Storage temperature..... -40 to +95 °C

ORDERING INFORMATION

RGB-2000 Series 500 MHz RGB and VGA Fiber Optic Transport System, 3 Fibers (SIN 58-6)

RGB-2000-FTX-50-ST RGB and VGA Fiber Optic Transmitter, Singlemode, 3 fibers, loop-through HD15 and BNC Inputs, 1600 by 1200, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, VGA, SVGA and UXGA, Component and Analog HDTV signals. (Requires 3 -ATT15 15 dBm attenuators)

RGB-2000-FRX-50-ST RGB and VGA Fiber Optic Receiver, Singlemode, 3 fibers, HD15 and BNC outputs, 1600 by 1200, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, VGA, SVGA and UXGA, Component and Analog HDTV signals.

Options and Accessories

-KM Add PS/2 Keyboard and Serial Mouse support for the RGB-2000, requires a 4th fiber, Singlemode ONLY (option required for both the transmitter and receiver) (PS/2 Mouse Not Supported)

-KMA Add PS/2 Keyboard, Serial Mouse and Audio support for the RGB-2000, includes Stereo Line level inputs and outputs and Microphone input with AGC, requires a 4th fiber, Singlemode ONLY (option required for both the transmitter and receiver) (PS/2 Mouse Not Supported)

KMA-2000-FMX-35 Stand-alone, PS/2 Keyboard, Serial Mouse and Audio Fiber Link includes Stereo Line level inputs and outputs and Microphone input with AGC, requires a 2nd fiber, Singlemode & Multimode. (PS/2 Mouse Not Supported) (requires KMA-2000-FMX-53)

KMA-2000-FMX-53 Stand-alone, PS/2 Keyboard, Serial Mouse and Audio Fiber Link includes Stereo Line level inputs and outputs and Microphone input with AGC, requires a 2nd fiber, Singlemode & Multimode. (PS/2 Mouse Not Supported) (requires KMA-2000-FMX-35)

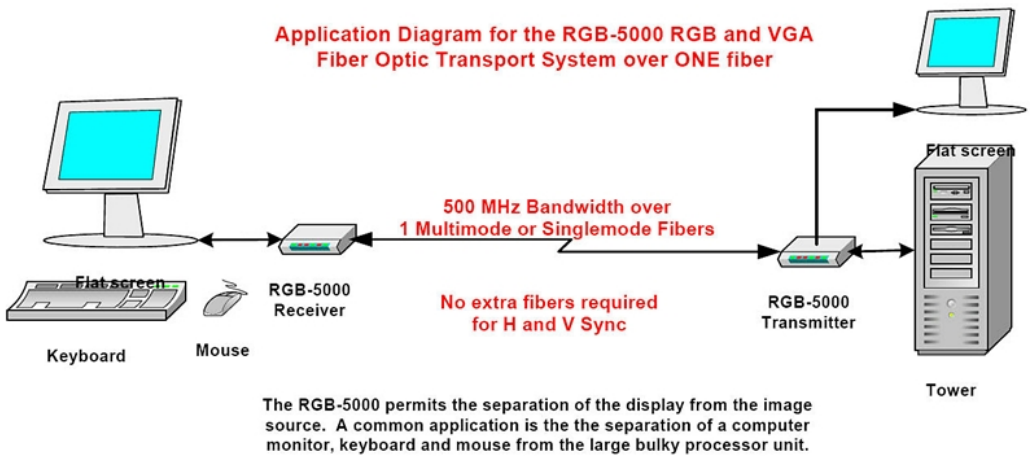
-ATT15 15 dBm inline, optical attenuator, ST male to ST female (Requires 3 for each RGB-2000-FTX-50-ST Singlemode systems for Short Distances)

HD15M-CABLE Male to Male, HD15 Connector, SVGA Monitor Cable, 6 feet (Use to connect the SVGA computer output to the RGB-2000-FTX transmitter)

HD15M-BNC-CABLE Male HD15 to 5 BNC Connectors, SVGA Monitor Cable, 6 feet (Use to convert an HD15 to 5 BNC connectors. The RGB2000 supports both HD15 and BNC connectors)

13W3M-BNC-CABLE Male 13W3M to 4 BNC Connectors, SVGA Monitor Cable, 6 feet (Use to convert an 13W3M to 4 BNC connectors. The Composite Sync signal should be connected the RGB-2000-FTX HSYNC input)

Synchronous, Single Fiber, Digital, RGB and VGA Fiber Optic Transport System


Application Diagram for the RGB-5000 RGB and VGA
Fiber Optic Transport System over ONE fiber
500 MHz Bandwidth over
1 Multimode or Singlemode Fibers
Flat screen
Flat screen
RGB-5000
Receiver
No extra fibers required
for H and V Sync
RGB-5000
Transmitter
Keyboard
Mouse
Tower
The RGB-5000 permits the separation of the display from the image source. A common application is the the separation of a computer monitor, keyboard and mouse from the large bulky processor unit.

SUMMARY

. Transport RGB, XVGA, SVGA and UXGA signals plus various configurations of H and V sync over ONE fiber.
. 1900 x 1600 @ 75 Hz
. CWDM 18 Channels of RGB/UXGA on one fiber, RGB-5000-FTX-7-xxxx
. Daisy-chain one UXGA Source to Multiple Monitors, RGB-5000-FTX/FRX-DC
. Ethernet & Data option avalable, RGB-5000-
. Fully Automatic, no user adjustments or external FTX/FRX-ET
. Lower Cost, RGB/SXGA on ONE fiber, RGB-5000-SXGA
. Integrated Stereo Audio option available
. Keyboard, Mouse and Audio support available with KMA-2000-FMX.
. System has loop-through HD15 inputs and one HD15 output.
. Fully Automatic, no user adjustments or external computer calibration set-up

The RGB-5000 provides horizontal gen-lock for a fully synchronous and jitter free high resolution video transport. The video and sync jitter reduced to as low as 4 - 5 nano seconds. The data throughput is 3.125 Gbps. Most systems have a 1.25 GB/S data throughput with high compression. The system enables remoting of a monitor from the video source. It provides electrical isolation and immune to electrical noise in the transmission path. Application include commodity and stock exchanges, medical and MRI displays, advertising and signs, sporting and concert video displays, video walls, digital cinema, radar displays, air traffic control, military information displays plus many more…

SPECIFICATIONS

VIDEO SIGNAL
Number of Channels: 3
Standards Supported: .... RGB HV, RGsB, VGA, SVGA, UXGA with TTL H & V sync, Sun and Apple Macintosh with TTL, composite sync, Silicon Graphics with sync on-green
Scan Rates:
Horizontal: ..... 15.75 KHz to 130 KHz
Vertical: .....50-150 Hz
Signal-to-Noise Ratio: ..... >60 dB
Resolution:
Singlemode: ..... 1900 H x 1600 V @ 75 Hz
Multimode: ..... 1900 H x 1600 V @ 75 Hz

OPTICAL
Number of Optical Fibers: 1
Wavelength:
Multimode, RGB-5000-FTX-2: .....850 nm
Singlemode, RGB-5000-FTX-50/-52:.....1310 nm
Optical Budget, minimum: ..... 8 dBm (-50) SM, 13 dBm (-52) SM, 6 dBm (-2) MM
Operating Distance, (-50) SM: ..... up to 2 KM over 8.3/125 µm
Operating Distance, (-52) SM: ..... up to 15 KM over 8.3/125 µm
Operating Distance, (-2) MM: ..... up to 600 meters over 62.5/125 µm
Emitter Type: ..... Laser
Transmitter Power, minimum: ..... -10 dBm (-50) SM, -5 dBm (-52) SM, -9 dBm (-2) MM
Receiver Sensitivity, maximum: ..... -18 dBm (-50) SM, -18 dBm (-52) SM, -15 dBm (-2) MM
Temperture Range:..... 0c to 70c
Dimensions:
RGB-5000: (L x W x H)..... 7" L x 5 ¾" W x 1 ¾" H
Triple Rack-mount Kit for
3 modules (Part number -RMT): ..... 7" L x 19" W x 1 ¾" H
Power consumption:..... 15 Watts

ORDERING INFORMATION

RGB-5000 Series Digital RGB and SXGA Fiber Optic Transport System, ONE Fiber, Multimode (SIN 58-6)

RGB-5000-FTX-SXGA-2-ST
Digital RGB and SXGA Fiber Optic Transmitter, Multimode, -9dBm, 1 fiber, loop-through HD15 inputs, 1280 by 1024, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, SXGA, SSXGA and SXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX unit for keyboard, mouse & audio) (Includes wall-mount power supply)

RGB-5000-FRX-SXGA-2-ST
Digital RGB and SXGA Fiber Optic Receiver, Multimode, -15 dBm, 1 fibers, HD15 output, 1280 by 1024, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, SXGA, SSXGA and SXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)

RGB-5000-FRX-SXGA-2-ST-DC
Digital RGB and SXGA Fiber Optic Receiver **with Daisy Chain** Optics. Multimode, -15 dBm, 1 fibers, HD15 output, 1280 by 1024, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, SXGA, SSXGA and SXGA, Component and Analog HDTV signals. (May require AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)

RGB-5000 Series Digital 500 MHz RGB and SXGA Fiber Optic Transport System, ONE Fiber, Singlemode and CWDM

RGB-5000-FTX-SXGA-50-ST
Digital RGB and SXGA Fiber Optic Transmitter, Singlemode, -10dBm, 1 fiber, loop-through HD15 inputs, 1280 by 1024, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, SXGA, SSXGA and SXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)

RGB-5000-FTX-SXGA-52-ST
Digital RGB and SXGA Fiber Optic Transmitter, Singlemode, -5dBm, 1 fiber, loop-through HD15 inputs, 1280 by 1024, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, SXGA, SSXGA and SXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)

RGB-5000-FTX-SXGA-7-XXXX-15KMST
Digital RGB and SXGA Fiber Optic Transmitter, Singlemode, CWDM, 15KM, 1 fiber, loop-through HD15 inputs, 1280 by 1024, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, SXGA, SSXGA and SXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)

RGB-5000-FTX-SXGA-7-XXXX-40KMST
Digital RGB and SXGA Fiber Optic Transmitter, Singlemode, CWDM, 40KM, 1 fiber, loop-through HD15 inputs, 1280 by 1024, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, SXGA, SSXGA and SXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)

RGB-5000-FRX-SXGA-50-ST
Digital RGB and SXGA Fiber Optic Receiver, Singlemode, -18dBm, 1 fibers, HD15 output, 1280 by 1024, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, SXGA, SSXGA and SXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)

RGB-5000-FRX-SXGA-50-ST-DC
Digital RGB and SXGA Fiber Optic Receiver **with Daisy Chain** Optics. Singlemode, -18dBm, 1 fibers, HD15 output, 1280 by 1024, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, SXGA, SSXGA and SXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)

ORDERING INFORMATION

RGB-5000 Series Digital 500 MHz RGB and UXGA Fiber Optic Transport System, ONE Fiber, Multimode (SIN 58-6)

RGB-5000-FTX-2-ST
Digital RGB and UXGA Fiber Optic Transmitter, Multimode, -9dBm, 1 fiber, loop-through HD15 inputs, 1900 by 1600, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, UXGA, SUXGA and UXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX unit for keyboard, mouse & audio) (Includes wall-mount power supply)

RGB-5000-FRX-2-ST
Digital RGB and UXGA Fiber Optic Receiver, Multimode, -15 dBm, 1 fibers, HD15 output, 1900 by 1600, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, UXGA, SUXGA and UXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)

RGB-5000-FRX-2-ST-DC
Digital RGB and UXGA Fiber Optic Receiver **with Daisy Chain** Optics. Multimode, -15 dBm, 1 fibers, HD15 output, 1900 by 1600, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, UXGA, SUXGA and UXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA- 2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)

RGB-5000 Series Digital 500 MHz RGB and UXGA Fiber Optic Transport System, ONE Fiber, Singlemode and CWDM

RGB-5000-FTX-50-ST
Digital RGB and UXGA Fiber Optic Transmitter, Singlemode, -10dBm, 1 fiber, loop-through HD15 inputs, 1900 by 1600, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, UXGA, SUXGA and UXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)

RGB-5000-FTX-52-ST
Digital RGB and UXGA Fiber Optic Transmitter, Singlemode, -5dBm, 1 fiber, loop-through HD15 inputs, 1900 by 1600, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, UXGA, SUXGA and UXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)

RGB-5000-FTX-7-XXXX-15KM-ST
Digital RGB and UXGA Fiber Optic Transmitter, Singlemode, CWDM, 15KM, 1 fiber, loop-through HD15 inputs, 1900 by 1600, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, UXGA, SUXGA and UXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)

RGB-5000-FTX-7-XXXX-40KM-ST
Digital RGB and UXGA Fiber Optic Transmitter, Singlemode, CWDM, 40KM, 1 fiber, loop-through HD15 inputs, 1900 by 1600, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, UXGA, SUXGA and UXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)

RGB-5000-FRX-50-ST
Digital RGB and UXGA Fiber Optic Receiver, Singlemode, -18dBm, 1 fibers, HD15 output, 1900 by 1600, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, UXGA, SUXGA and UXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)

RGB-5000-FRX-50-ST-DC
Digital RGB and UXGA Fiber Optic Receiver **with Daisy Chain** Optics. Singlemode, -18dBm, 1 fibers, HD15 output, 1900 by 1600, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, UXGA, SUXGA and UXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)

RGB-5000 Series Digital 500 MHz RGB and UXGA Fiber Optic Transport System, ONE Fiber, Singlemode with 10BaseT & RS232/RS422 (SIN 58-6)

RGB-5000-FTX-50-ST-ET
Digital RGB and UXGA Fiber Optic Transmitter with Duplex 10BaseT Ethernet and RS232/RS422 Data Channels, Singlemode, -10dBm, 1 fiber, loopthrough HD15 inputs, 1900 by 1600, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, UXGA, SUXGA and UXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)

RGB-5000-FRX-50-ST-ET
Digital RGB and UXGA Fiber Optic Receiver with Duplex 10BaseT Ethernet and RS232/RS422 Data Channels, Singlemode, -18dBm, 1 fibers, HD15 output, 1900 by 1600, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, UXGA, SUXGA and UXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)

ORDERING INFORMATION

Options and Accessories

-AUDIO
Stereo Audio Option for the RGB-5000. (1) each for transmitter & receiver side.

-RMT
Triple Rack-mount Kit (1 kit)

-BLANK
Blank panel for rack-mounting kit

TRI-PS-5VDC
Triple Power Supply, 5VDC, 6 Amps used to power up to three RGB-5000

-KMM
Add PS/2 Keyboard and Serial Mouse support for the RGB-2000, requires a 4th fiber, Multimode ONLY (option required for both the transmitter and receiver) (PS/2 Mouse Not Supported)

-KMAM
Add PS/2 Keyboard, Serial Mouse and Audio support for the RGB-2000, includes Stereo Line level inputs and outputs and Microphone input with AGC, requires a 4th fiber, Multimode ONLY (option required for both the transmitter and receiver) (PS/2 Mouse Not Supported)

KMA-2000-FMX-35M
Stand-alone, PS/2 Keyboard, Serial Mouse and Audio Fiber Link includes Stereo Line level inputs and outputs and Microphone input with AGC, requires a2nd fiber, Multimode & Multimode. (PS/2 Mouse Not Supported) (requires KMA-2000-FMX-53) (Includes wall-mount power supply)

KMA-2000-FMX-53M
Stand-alone, PS/2 Keyboard, Serial Mouse and Audio Fiber Link includes Stereo Line level inputs and outputs and Microphone input with AGC, requires a 2nd fiber, Multimode & Multimode. (PS/2 Mouse Not Supported) (requires KMA-2000-FMX-35) (Includes wall-mount power supply)

-KMS
Add PS/2 Keyboard and Serial Mouse support for the RGB-2000, requires a 4th fiber, Singlemode ONLY (option required for both the transmitter and receiver) (PS/2 Mouse Not Supported)

-KMAS
Add PS/2 Keyboard, Serial Mouse and Audio support for the RGB-2000, includes Stereo Line level inputs and outputs and Microphone input with AGC, requires a 4th fiber, Singlemode ONLY (option required for both the transmitter and receiver) (PS/2 Mouse Not Supported)

KMA-2000-FMX-35S
Stand-alone, PS/2 Keyboard, Serial Mouse and Audio Fiber Link includes Stereo Line level inputs and outputs and Microphone input with AGC, requires a 2nd fiber, Singlemode & Multimode. (PS/2 Mouse Not Supported) (requires KMA-2000-FMX-53) (Includes wall-mount power supply)

KMA-2000-FMX-53S
Stand-alone, PS/2 Keyboard, Serial Mouse and Audio Fiber Link includes Stereo Line level inputs and outputs and Microphone input with AGC, requires a 2nd fiber, Singlemode & Multimode. (PS/2 Mouse Not Supported) (requires KMA-2000-FMX-35) (Includes wall-mount power supply)

-ATT15
15 dBm inline, optical attenuator, ST male to ST female (Requires 3 for each RGB-2000-FTX-50-ST Singlemode systems for Short Distances)

HD15M-CABLE
Male to Male, HD15 Connector, SVGA Monitor Cable, 6 feet (Use to connect the SVGA computer output to the RGB-2000-FTX transmitter)

HD15M-BNC-CABLE
Male HD15 to 5 BNC Connectors, SVGA Monitor Cable, 6 feet (Use to convert an HD15 to 5 BNC connectors. The RGB2000 supports both HD15 and BNC connectors)

13W3M-BNC-CABLE
Male 13W3M to 4 BNC Connectors, SVGA Monitor Cable, 6 feet (Use to convert an 13W3M to 4 BNC connectors. The Composite Sync signal should be connected the RGB-2000-FTX HSYNC input)

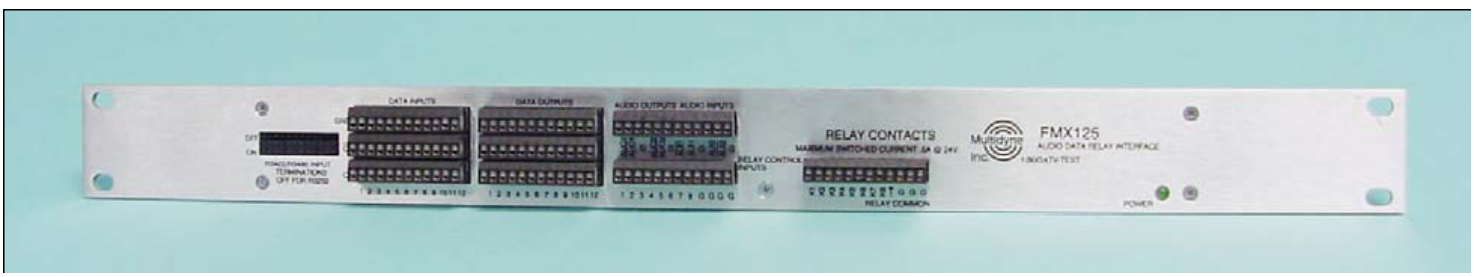
Feature Benefits of the RGB-5000 UXGA Video, Audio, Data and Ethernet Fiber Link

- One Multimode or Singlemode fiber optic cable shall be used to connect a transmitter to a receiver.
- The transmitter and receiver pairs are self calibrating and adjusting to account for varying H and V scan rates and resolution. Manual adjustments are not necessary and shall not be needed.
- An external computer is not required for system set-up and calibration.
- The system will lock instantly and automatically to changes in video format and resolution.
- The system is compatible with fiber optic switching.
- The system is available with optional fiber optic switching of all signals.
- The system will lock and support to all resolutions and scan rates as per RGB HV, RGsB, VGA, SVGA, UXGA with TTL H & V sync, Sun and Apple Macintosh with TTL, composite sync, Silicon Graphics with sync on-green standards and specificatioopns.
- No front panel controls are offered limiting installation setup, calibration and prevents systems tampering.
- The system uses 24 bit encoding with 8 bits for each of the Red, Green and Blue video signal components.
- A reduction from 24 bit encoding at higher scan rates is not performed preventing banding or contouring distortions.
- All units are available in either stand-alone or rack mounted configurations
- All units are powered by 5VDC in either configuration
- Power consumption is to be limited to 15 Watts
- Up to three transmitter or receiver units fit in one 19 inch rack-unit.
- Transmitters shall have a looping HD-15 connector for local monitoring
- The operational temperature range shall be 0C to +70C
- Video resolution of 1600 x 1200 @ 75 HZ shall be supported
- Horizontal scan rates of 15.75 to 130 kHz and vertical scan rates of 50 to 150 Hz shall be supported
- Location and detection of sync signals shall be automatic
- Data throughput of 3.125 Gbps with no compression shall be supported
- Video and sync jitter shall be <5 nano seconds
- Video signal to noise ratio shall be >60db
- Optional stereo line level audio channel in the same direction as the video is supported
- Audio connector is 3.5mm stereo plug on the transmitter and the receiver
- Optional Bi-directional RS-232 or RS-422 data is supported. The data format is field selectable be either jumper or switch selection.
- Optional 10 Base T Ehternet is supported
- Optional Daisy-chain or drop and repeat feature is available on the receiver units.
- Optionally transport up to 18 UXGA video signals over ONE fiber using CWDM optical multiplxing

12 Bi-dir Data, 2 Bi-dir Audio & 8 Tally/Relay Fiber Optic Multiplexer

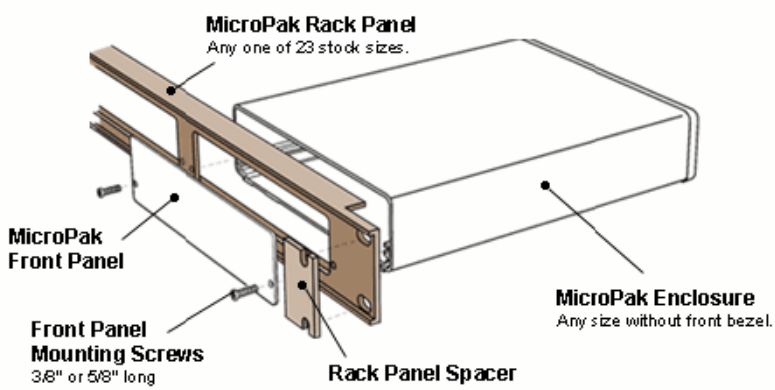
SUMMARY

- Supports 12 bi-directional data channels
- Supports 2 bi-directional audio channels (stereo)
- Supports 8 Tally or Relay contact closures
- Single and multimode versions.
- Optical budget up to 28dB.
- Standalone or rack mount.
- Front panel data indicators.
- Supports RS-232, RS-422 or RS-485 **data channels** at up to **115.2 Kbaud**
- Temperature range **-40° to 75°C.**
- Designed and manufactured in the U. S. A.
- 7 year warranty on parts and labor.
- Applications include security, surveillance, distance learning, teleconferencing, medical, industrial, broadcast TV, cable TV and **Intelligent Transportation Systems (ITS).**



AD-FMX-125 Adapter Interface Panel for FMX-125

RACK-MOUNT KIT, -RMT TRIPLE RM:



SPECIFICATIONS

Data Channel Protocol (selectable in banks of 4 ch.) .....RS-232C, RS-422 or RS-485 Data
Data Configuration (RS422 mode supports RS485) ..... Data Channels 0 & 1=RS422 I/O, 2 & 3=RS232 I/O; No termination.
Data Ch 0, 1 & 2=RS422 I/O, 3=RS422 In & RS232 Out; RS422 Termination ON.
Data Channels 0 thru 3=RS232 I/O; No termination.
Data Rate .....DC to 115.2 Kbps
Data and Audio I/O's .....44 pins D-Type Connector, Optional screw terminal adapter
Bit Error Rate .....< 1x10-9
Signal to noise .....> 90 dB
Frequency response to 20 Hz to 20 KHz .....< +/- 0.1 dB
Distortion .....< 0.05%
Audio output level .....Unity
Maximum input & output level, 600 Ohm .....+18 dBm
Audio output impedance, balanced .....50 Ohms
Audio input impedance, balanced .....600 Ohms or High
Power dissipation .....< 15 Watts, per unit
AC operation .....110 or 220 VAC (optional 48VDC)
Operating temperature..... -40° to +75°C
Operating Humidity .....0-95% non-condensing
Wavelength 1310/1550nm
Output Power, minimum .....0 dBm Singlemode
Receiver Sensitivity .....-24 dBm Singlemode
Optical Loss Budget, minimum .....24 dBm Singlemode
Portable and Wall-mount: .....7" L x 5 ¾" W x 1 ¾" H
Triple Rack-mount Kit for 3 modules (Part number -RMT): .....7" L x 19" W x 1 ¾" H
UTIL-200-DVM 10 Slot Tray .....13 ¾" L x 19" W x 3 ½" H

ORDERING INFORMATION

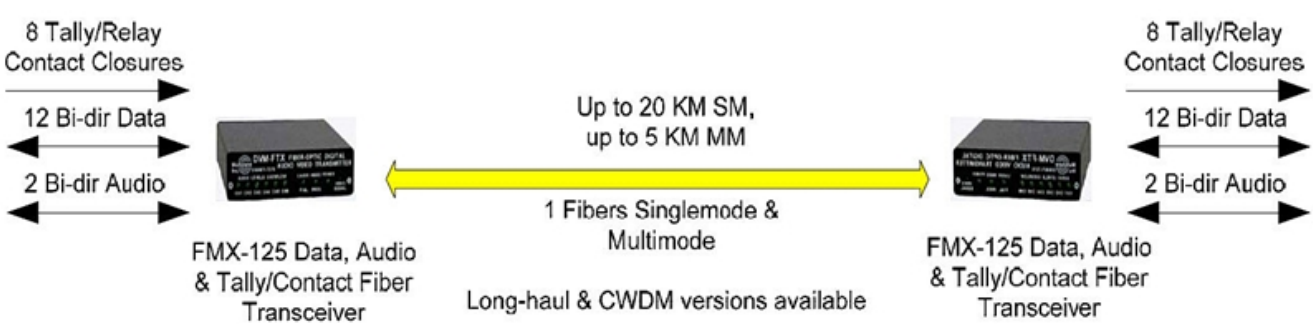
Fiber Optics, Voice and Data Multiplexers:

FMX-125-35
DATA Transceiver with 12 Channels of Bi-directional Data, 2 Channels of Bi-directional Audio, and 8 Channels of Relay or Tally Control, Singlemode 1310nm TX, 1550nm RX, -0 dBm, ST connector, Sensitivity –25 dB. (Requires FMX-125-53 & AD-125 Interface Adapter) (May require -RMT, -BLANK)

FMX-125-53
DATA Transceiver with 12 Channels of Bi-directional Data, 2 Channels of Bi-directional Audio, and 8 Channels of Relay or Tally Control, Singlemode 1550nm TX, 1310nm RX, -0 dBm, ST connector, Sensitivity –25 dB. (Requires FMX-125-35) (Requires AD-125 Interface Adapter) (May require -RMT, -BLANK)

-RMT Triple Rack-mount Kit (1 set)
-BLANK Blank panel for rack-mounting kit
AD-FMX-125 Break-out Adapter for FMX125 to Quick-release screw terminal connectors for 12 Bi-directional Data, 2 Audio Inputs, 2 Audio Outputs and 8 Relay/Tally channels, 1 RU (Requires 2)

Application Diagram for DVM3000 & DVM3000-MOD Video, Audio & Data Fiber Optic Transport System


8 Tally/Relay Contact Closures
12 Bi-dir Data
2 Bi-dir Audio
FMX-125 Data, Audio & Tally/Contact Fiber Transceiver
Up to 20 KM SM, up to 5 KM MM
1 Fibers Singlemode & Multimode
Long-haul & CWDM versions available
8 Tally/Relay Contact Closures
12 Bi-dir Data
2 Bi-dir Audio
FMX-125 Data, Audio & Tally/Contact Fiber Transceiver

10/100Base-T Ethernet to Fiber Optic Media Converter

SUMMARY

Media Converter Features:

- **Complies with IEEE 802.3 standard**
- **Supports network traffic at a rate of 10Mbps**
- **10M/100M and full/half duplex automatically configure**
- **Multimode and Singlemode systems available**
- **Systems available with TWO and ONE fiber transport capability**
- **Multiple optical wavelength and fiber cable options**
- **Easy installation**

10 Slot Rack Features:

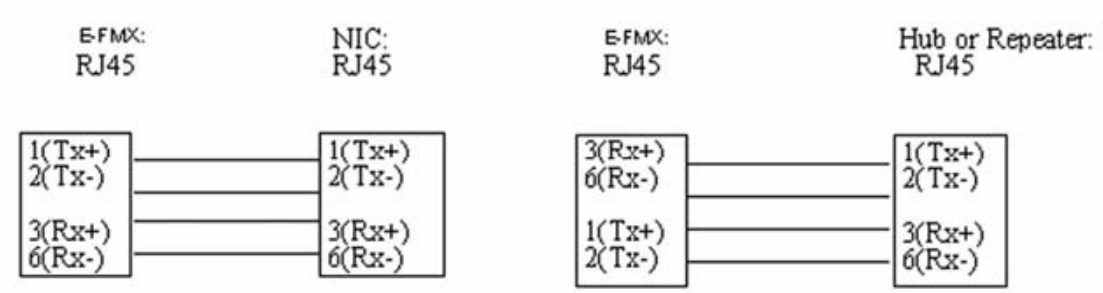
- High Performance Switch Power Supply.
- Double Power Redundancy Backup.
- Power Supply 100-220V AC.
- Operating 0~70 degrees C.
- Power LED indicator.
- Suitable for Standard Converter HEMC Series.

EMCR-10-2C2

Description:

The Multidyne HEMC-400 Series of Ethernet Fiber Optic Transceivers comply with the IEEE 802.3 Standard.
The HEMC-400 is designed to convert data signal between 10/100 Base-Tx and 100 Base-Fx fast Ethernet.
It supports 10BASE-T, 100BASE-TX, and 100BASE-FX applications. The data signal converted by HEMC-400 high performance media converter can be transmitted up to 100Km by 10Base-FL cable.
The standard HEMC-400 is equipped with two fiber optic connectors (one for transmitting-Tx and the other for receiving-Rx) and one RJ-45 Jacks and one external power supply.
The **HEMC421/411** provides ethernet transport over **ONE fiber**.
The TX and RX optical signals are Wave-division Multiplexed (WDM) onto ONE fiber.
Six LED indicators are built-in for easy diagnosing and monitoring the status of power, UT UTP Activity, Fiber Link, Fiber Activity, Full duplex. It can automatically configure itself for 100 or 10 Mbps and Full Duplex or Half Duplex operation. It is compact, cost-effective, low power, high reliable and stable.
It can be used in standalone applications, or Rack-Mounted applications where multiple media converter can be inserted into a rack-mount chassis, and allowing all the converters to be powered by a single internal power supply.

Interface connect:



SPECIFICATIONS

Parameter	HEMC481M HEMC482M	HEMC431M	HEMC431S -20, -40, -60	HEMC451S	HEMC421 HEMC411 -20 -60
Data rate (Mbps)	10/100				
Optical wavelength (nm)	850	1310	1310	1550	1310 & 1550
Fiber Type(um)	Multimode	Multimode	Singlemode	Singlemode	Singlemode
	62.5/125	62.5/125	9/125	9/125	9/125
Connector Type	SC, ST	SC, ST	SC	SC	SC
Optical Power, min			-18, -12, -8	-8	-18, -8
Sensitivity			-34, -36, -38	-38	-34, -38
Optical Budget, dBm	10	12	16, 24 , 30	30	16, 30
Power Supply	1A@5VDC±5%				
Operating Temperature	0~+70°C				
Storage Temperature	-20~85°C				
Relative Humidity	5% to 80% non condensing				
Dimension	105mm×72mm×27mm (5V DC)				

ORDERING INFORMATION

10/100Base-T Ethernet to Fiber Optic Media Converter , Multimode, TWO Fiber (SIN 58-6)

HEMC-481M-B12 Ethernet Fiber Optic Transceiver designed to convert data signal between 10/100 Base-Tx and 100 Base-Fx fast Ethernet. Includes **850nm Multimode** optics with **SC connectors**. Power: -14dBm~-4dBm, Sensitivity: <-24dBm, **Budget: 10dBm min**. It supports 10BASET, 100BASE-TX, and 100BASE-FX applications. (Includes wall-mount power supply)

HEMC-482M-B12 Ethernet Fiber Optic Transceiver designed to convert data signal between 10/100 Base-Tx and 100 Base-Fx fast Ethernet. Includes **850nm Multimode** optics with **ST connectors**. Power: -14dBm~-4dBm, Sensitivity: <-24dBm, **Budget: 10dBm min**. It supports 10BASET, 100BASE-TX, and 100BASE-FX applications. (Includes wall-mount power supply)

HEMC-431M-B12 Ethernet Fiber Optic Transceiver designed to convert data signal between 10/100 Base-Tx and 100 Base-Fx fast Ethernet. Includes **1310nm Multimode** optics with **SC connectors** for **up to 5KM distance**. Power: -20dBm~-14dBm, Sensitivity: <-32dBm, **Budget: 12dBm min.** It supports 10BASE-T, 100BASE-TX, and 100BASE-FX applications. (Includes wall-mount power supply)

HEMC-432M-B12 Ethernet Fiber Optic Transceiver designed to convert data signal between 10/100 Base-Tx and 100 Base-Fx fast Ethernet. Includes **1310nm Multimode** optics with **ST connectors** for **up to 5KM distance**. Power: -20dBm~-14dBm, Sensitivity: <-32dBm, **Budget: 12dBm min.** It supports 10BASE-T, 100BASE-TX, and 100BASE-FX applications. (Includes wall-mount power supply)

10/100Base-T Ethernet to Fiber Optic Media Converter , Singlemode TWO Fiber (SIN 58-6)

HEMC-431S-40-B12 Ethernet Fiber Optic Transceiver designed to convert data signal between 10/100 Base-Tx and 100 Base-Fx fast Ethernet. It supports 10BASE-T, 100BASE-TX, and 100BASE-FX applications. Includes **1310nm Singlemode** optics with **SC connectors.** Power: -8~-12dBm, Sensitivity: <-36dBm, **Budget: 24dBm min.** (Includes wall-mount power supply)

HEMC-431S-60-B12 Ethernet Fiber Optic Transceiver designed to convert data signal between 10/100 Base-Tx and 100 Base-Fx fast Ethernet. It supports 10BASE-T, 100BASE-TX, and 100BASE-FX applications. Includes **1310nm Singlemode** optics with **SC connectors.** Power: -5~-8dBm,Sensitivity: <-38dBm, **Budget: 30dBm min.** (Includes wall-mount power supply)

HEMC-451S-B12 Ethernet Fiber Optic Transceiver designed to convert data signal between 10/100 Base-Tx and 100 Base-Fx fast Ethernet. It supports 10BASE-T, 100BASE-TX, and 100BASE-FX applications. Includes **1550nm Singlemode** optics with **SC connectors** for **up to 100KM distance.** (Includes wall-mount power supply)

HEMC-4xx1S-B12 **CWDM Ethernet Fiber Optic Transceiver** designed to convert data signal between 10/100 Base-Tx and 100 Base-Fx fast Ethernet. It supports 10BASE-T, 100BASE-TX, and 100BASE-FX applications.
Includes **CWDM Singlemode optics with SC connectors for up to 100KM distance.**
Designate "xx" for the CWDM wavelength 1471=47, 1491=49, 1511=51, 1531=53, 1551=55, 1571=57, 1591=59, 1611=61
(Includes wall-mount power supply)

10/100Base Fiber Optic Ethernet Media Transceiver, Singlemode ONE Fiber (SIN 58-6)

HEMC411SC20-35-B11 10/100Mbps, Fiber Optic Ethernet Media Transceiver, Singlemode ONE Fiber, SC Connector, **1310Tx/1550Rx, 20km** (Includes wall-mount power supply) (Requires HEMC421SC20-53-B11)

HEMC421SC20-53-B11 10/100Mbps, Fiber Optic Ethernet Media Transceiver, Singlemode ONE Fiber, SC Connector, **1550Tx/1310Rx, 20km** (Includes wall-mount power supply) (Requires HEMC411SC20-35-B11)

HEMC411SC60-35-B11 10/100Mbps, Fiber Optic Ethernet Media Transceiver, Singlemode ONE Fiber, SC Connector, **1310Tx/1550Rx, 60km** (Includes wall-mount power supply) (Requires HEMC421SC60-53-B11)

HEMC421SC60-53-B11 10/100Mbps, Fiber Optic Ethernet Media Transceiver, Singlemode ONE Fiber, SC Connector, **1550Tx/1310Rx, 60km** (Includes wall-mount power supply) (Requires HEMC411SC60-35-B11)

Modular Utility Trays and Power Supplies: (SIN 58-6)

EMCR-10-2C2 10 Slots Rack for HEMC Series of Ethernet Media Converter; Double Power Redundancy Backup.

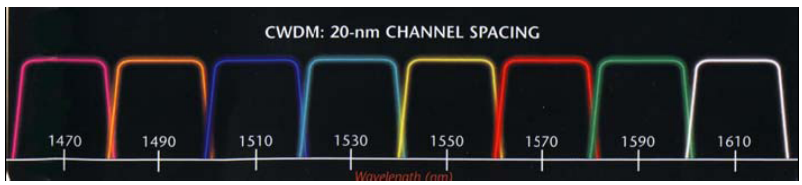
USB Fiber Optic Link with 4 Port Hub

SUMMARY

The USB-2000 USB Fiber Optic Link permits the extension of USB 2.0 signals up to 10 Kilometers.
The system supports 4 USB ports are each end of the link.
Now the user can extend the distance limitations of USB via MultiDyne proprietary fiber optic link.
Applications include remoting keyboard and mouse functions for the remote control of computer systems, networking USB peripherals in remote location plus many more….
Systems are available in Multimode and Singlemode.
Systems are available with ONE or TWO fiber optic ports.
The USB-2000 is the ideal companion to the RGB2000 and RGB5000 RGB/ UXGA Video Fiber Optic Links.
Now you can transport high resolution graphics with USB 2.0.

- **Extend USB 2.0 beyond 30 feet over Multimode and Singlemode fiber up to 10 KM**
- **Transmitter includes 1x USB Input & MTRJ Optical Output**
- **Receiver includes MTRJ Optical Inputs & 4 USB Outputs**
- **Ideal for USB 2.0 peripheral extention**
- **Ideal for KVM Keyboard Video and Mouse extension**
- **Great addition to a systems using the MultiDyne RGB-5000 or DVI-5000**

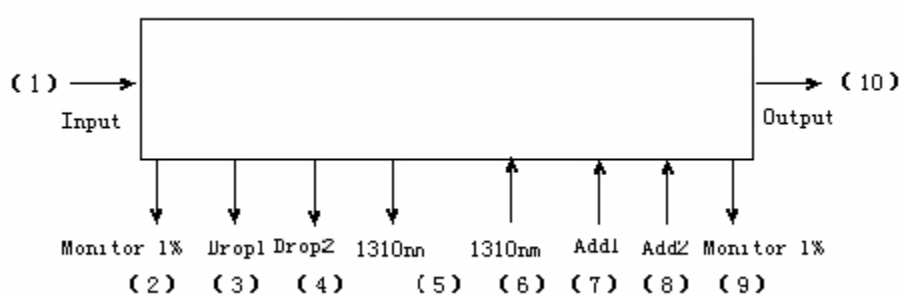
CWDM Optical Add & Drop Multiplexers



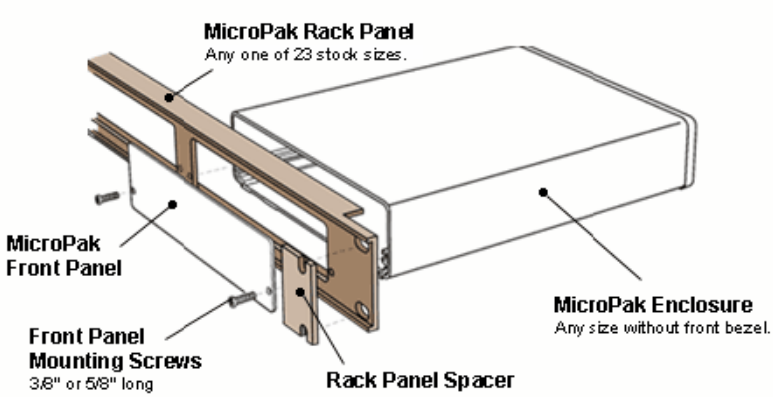
SUMMARY

- Supports Add and Drop function for 1 or 2 CWDM wavelengths.
- Units available to **Add 1 Ch.**; **Add 2 Ch.**; **Add 1 Ch. & Drop 1 Ch.**; **Add 2 Ch. & Drop 2 Ch.**; **Drop 1 Ch.** and **Drop 2 Ch**.
- 20 nm channels spacing for standard CWDM.
- Epoxy-free optical path for durability and reliability.
- Thin-film filter technology used for low insertion loss and high isolation.
- Supported wavelengths include **1270, 1290, 310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590 and 1610 nm**.
- Optical performance guaranteed over the temperature range 0 to 70 degrees C.
- The Laser wavelength drift is less than +/- 3 nm over temperature.

STRUCTURE



RACK-MOUNT KITS, -RMT Triple Rack-mount:



SPECIFICATIONS

Parameter			Unit	Thin Film Coarse WDM	
Type				Add	Drop
Operating Wavelength			nm	1471,1491,1511,1531,1551,1571,1591,1611	
Central Wavelength Accuracy			nm	<±1	
In-band Ripple			dB	0.5	
Passband Width@0.5dB			nm	>13	
Insertion Loss	(1) to (3)	Drop.	dB	<0.6	
	(1) to (4)	Drop.	dB	<1.2	
	(1) to (5)	Drop.	dB	<1.8	
	(1) to (2)	Mon.	dB	<20.5	
	(6) to (10)	Add.	dB	<1.8	
	(7) to (10)	Add.	dB	<1.2	
	(8) to (10)	Add.	dB	<0.6	
	(6) to (9)	Mon.	dB	<21.5	
	(7) to (9)	Mon.	dB	<21	
	(8) to (9)	Mon.	dB	<20.5	
Adjacent Channel Isolation			dB	≥15	≥30
Non-adjacent Channel Isolation			dB	N/A	≥40
Polarization Dependent Loss		MAX.	dB	0.1	
Polarization Mode dispersion		MAX.	ps	0.1	
Return Loss		MIN	dB	50	
Directivity		MIN.	dB	50	
Temperature Stability		MAX.	dB/°C	0.005	
Temperature Wavelength Drift		MAX.	nm/°C	0.005	
Power Handling		MAX.	mW	300	
Tensile Load		MAX.	N	5	
Operating Temperature			°C	0~70	
Storage Temperature			°C	-40~85	
Package Dimension			mm	125×96×14	

ORDERING INFORMATION

Fiber Optic Accessories; WDM's, CWDM's, Add/Drop & Protection Switches (SIN 58-6)

CWDM-2000-18	Coarse Wave Division Multiplexer for 1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Supports up to 18 wavelengths or channels per fiber optic cable. SC connectors. Requires the NEW corning SMF-28E CWDM enhanced Singlemode Fiber. (May require -RMD, -BLANK
CWDM-2000-16	Coarse Wave Division Multiplexer for 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Supports up to 16 wavelengths or channels per fiber optic cable. SC connectors. Requires the NEW corning SMF-28E CWDM enhanced Singlemode Fiber. (May require -RMD, -BLANK)
CWDM-2000-9	Coarse Wave Division Multiplexer for 1310, 1470, 1490, 1510, 1530, 1550, 1570, 1590 and 1610nm. Supports up to 9 wavelengths or channels per fiber optic cable. SC connectors. (May require -RMD, -BLANK)
CWDM-2000-8	Coarse Wave Division Multiplexer for 1470, 1490, 1510, 1530, 1550, 1570, 1590 and 1610nm. Supports up to 8 wavelengths or channels per fiber optic cable. SC connectors. (May require -RMD, -BLANK)
CWDM-2000-4	Coarse Wave Division Multiplexer for 1470, 1490, 1510, 1530 or 1550, 1570, 1590 and 1610nm. Supports up to 4 wavelengths or channels per fiber optic cable. SC connectors. (Specify wavelengths) (May require -RMT, -BLANK)
CWDM-1A-1D-xxxx	Coarse Wave Division Multiplexer, 1 Channel ADD & DROP for 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Unit will Drop and then Add a CWDM wavelength. SC connectors. (Specify wavelength for xxxx) (May require -RMT, -BLANK)
CWDM-2A-2D-xxxx-xxxx	Coarse Wave Division Multiplexer, 2 Channel ADD & DROP for 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Unit will Drop and then Add a CWDM wavelength. SC connectors. (Specify wavelength for xxxx) (May require -RMT, -BLANK)
CWDM-1A-xxxx	Coarse Wave Division Multiplexer, 1 Channel ADD for 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Unit will Drop and then Add a CWDM wavelength. SC connectors. (Specify wavelength for xxxx) (May require -RMT, -BLANK)
CWDM-1D-xxxx	Coarse Wave Division Multiplexer, 1 Channel DROP for 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Unit will Drop and then Add a CWDM wavelength. SC connectors. (Specify wavelength for xxxx) (May require -RMT, -BLANK)
WDM-MM-ST	Wave Division Multiplexer, 850 and 1300nm Multi-mode, ST Connectors
WDM-SM-FC	Wave Division Multiplexer, 1300 nm and 1550 nm Single Mode, FC Connectors (Optional -ST or -SC connectors)
SPLIT50/50	Optical Splitter, 50/50 Gould
SPLIT50/50CWDM	Optical Splitter, 50/50, CWDM Band
FiberSwitch-1x2	1 by 2 CWDM Fiber Switch, Singlemode, 0 - 5 VDC activation (Specify ST, FC or SC connectors) (May require -RMT, -BLANK)
-RMT	Triple Rack-mount Kit (1 kit)
-RMD	Dual Rack-mount Kit (1 kit)
-BLANK	Blank panel for rack-mounting kit
FSW-KSTST-WB	A/B Protection Switch,ST/UPC Connectors, 1470-1610 nm, CWDM, Single Mode
FVM-19X175	Chassis, 2 FSW plug-in modules 1.75in for 19in rack
ACC-110-48V-A	110 VAC to -48V DC Power Converter Desktop Style

Coarse Wave-Division Multiplexer for 4, 8, 16 & 18 Channels

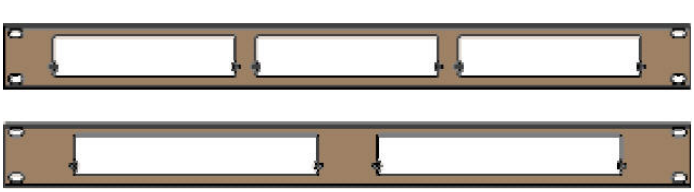
SUMMARY

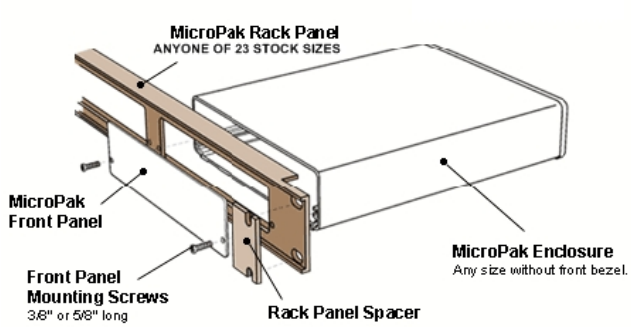
- Support for 4, 8, 12, 16 and 18 optical channels over ONE fiber.
- 20 nm channels spacing for standard CWDM.
- Epoxy-free optical path for durability and reliability.
- Thin-film filter technology used for low insertion loss and high isolation.
- Supported wavelengths include 1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590 and 1610 nm.
- By using TWO de-multiplexers, the system will support up to 18 wavelengths in ANY direction.
- Optical performance guaranteed over the temperature range 0 to 70 degrees C.
- The Laser wavelength drift is less than +/- 3 nm over temperature.

DESCRIPTION

The MULTIDYNE fiber optic product line is available with Coarse Wave-division Multiplexing technology. For applications in metropolitan areas or for long-haul feeds, the more bandwidth available per fiber the higher the return on investment. It is less expensive to add an additional wavelength than it is to install another fiber. The increase in bandwidth is up to 18 times.
Advances in laser and thin film technology have made it economically possible to provide more than 1 or 2 wavelengths per optical fiber. We can now multiplex 4, 8, 16 or 18 wavelengths on a single fiber.
For the highest performance and isolation it is recommended to use a Multiplexer at both the transmission side and the receiver side. If a Multiplexer is not used to filter the different wavelengths, an optical receive may receive more than one wavelength as an input and become inoperative.
It is desirable in many application to utilize the different wavelengths bi-directionally. For example, you may have 4 wavelengths in an East bound direction and 4 wavelengths in a West bound direction. This is easily accomplished by using a Demuliplexer on both sides of the link. **Unless otherwise stated, all MULTIDYNE CWDM systems are design for bi-directional operation utilizing demultiplexers.**
Just about every Multidyne fiber optic product is available with an option for a CWDM compliant laser. The supported wavelengths include 1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590 and 1610 nano-meters. The Laser wavelength drift is less than +/- 3nm from 0 to 70 degrees Centigrade.
Multidyne offers 4, 8, 16 and 18 channel Mux and Demux modules for CWDM applications. The 16 and 18 channel CWDMs require the new Corning Metro Optimized SMF-28e fiber. It has a more uniform attenuation characteristic over the extended CWDM spectrum. Add and Drop Mux and Demux modules are also available.
When ordering MULTIDYNE equipment you will note the “-7-xxxx” option. This is the CWDM laser option. The xxxx designates the desired wavelength. For example, if you would like a DVM-2000 fiber optic transmitter with a 1610nm CWDM laser.
The correct part number would be DVM-2000-FTX-7-1660.
Epoxy-free optical paths are used for increased durability and reliability. Thin-film filter technology is used for low insertion loss and high isolation. Optical performance guaranteed over the temperature range 0 to 70 degrees C.

RACK-MOUNT KITS, -RMT TRIPLE RM, -RMD DUAL RM:





SPECIFICATIONS

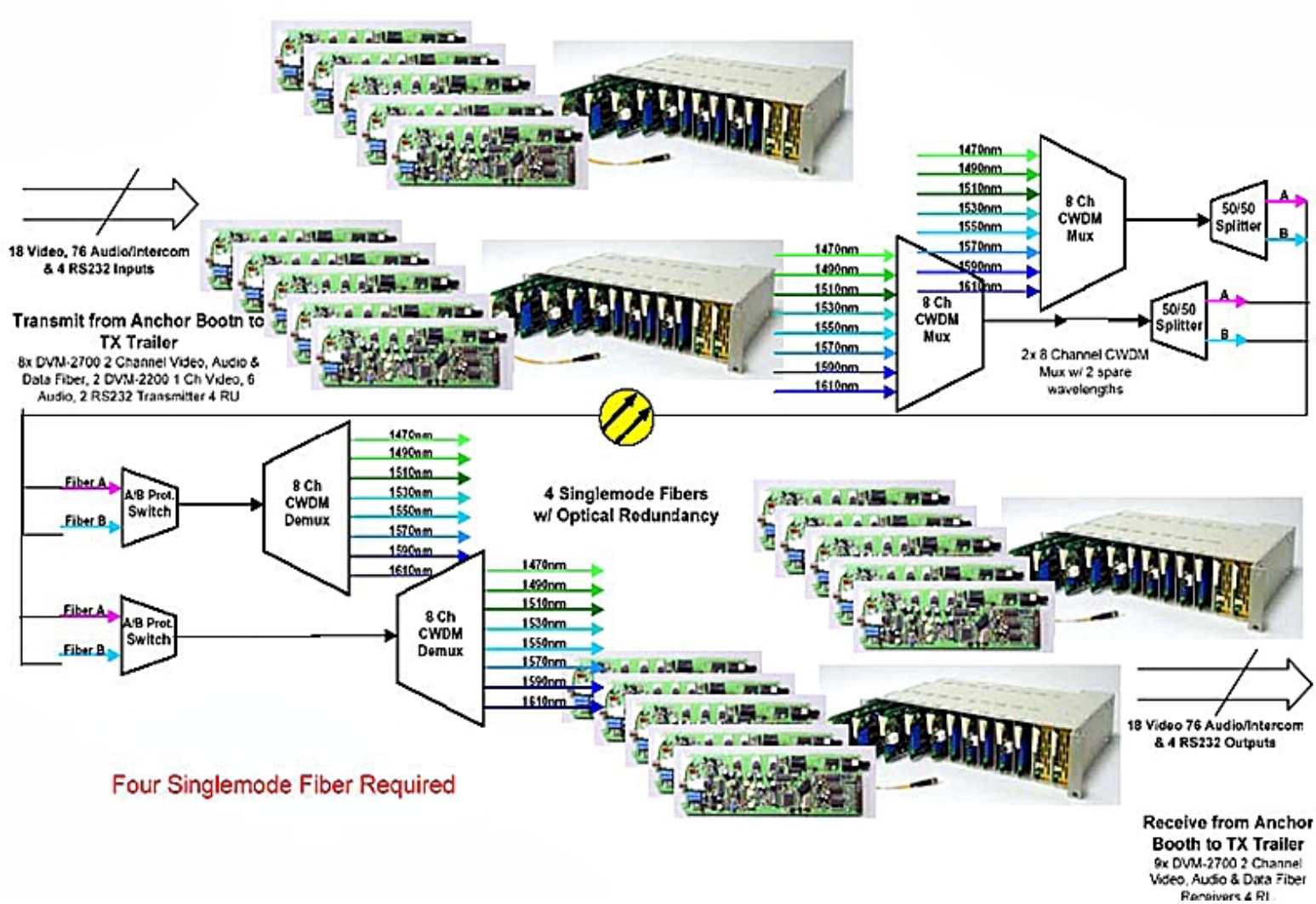
Parameter		Unit	Thin Film Coarse WDM	
Type			Mux	Demux
Operating Wavelength		nm	1470/1490/1510/1530/1550/1570/1590/1610	
Central Wavelength Accuracy		nm	<±1	
In-band Ripple		dB	0.5	
Pass-band Width @ 0.5dB		nm	>13	
Insertion Loss for 8 channel		dB	≤3.6	≤4.0
Adjacent Channel Isolation		dB	≥15	≥25
Non-adjacent Channel Isolation		dB	N/A	≥40
Uniformity	MAX.	dB	3	
Polarization Dependent Loss	MAX.	dB	0.15	
Polarization Mode dispersion	MAX.	ps	0.1	
Return Loss	MIN	dB	50	
Directivity	MIN.	dB	50	
Temperature Stability	MAX.	dB/°C	0.007	
Temperature Wavelength Drift	MAX.	nm/°C	0.005	
Power Handling	MAX.	mW	300	
Tensile Load	MAX.	N	5	
Operating Temperature		°C	0~70	
Storage Temperature		°C	-40~85	

ORDERING INFORMATION

Fiber Optic Accessories; WDM's, CWDM's, Add/Drop & Protection Switches (SIN 58-6)

CWDM-2000-18	Coarse Wave Division Multiplexer for 1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Supports up to 18 wavelengths or channels per fiber optic cable. SC connectors. Requires the NEW corning SMF-28E CWDM enhanced Singlemode Fiber. (May require -RMD, -BLANK)
CWDM-2000-16	Coarse Wave Division Multiplexer for 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Supports up to 16 wavelengths or channels per fiber optic cable. SC connectors. Requires the NEW corning SMF-28E CWDM enhanced Singlemode Fiber. (May require -RMD, -BLANK)
CWDM-2000-9	Coarse Wave Division Multiplexer for 1310, 1470, 1490, 1510, 1530, 1550, 1570, 1590 and 1610nm. Supports up to 9 wavelengths or channels per fiber optic cable. SC connectors. (May require -RMD, -BLANK)
CWDM-2000-8	Coarse Wave Division Multiplexer for 1470, 1490, 1510, 1530, 1550, 1570, 1590 and 1610nm. Supports up to 8 wavelengths or channels per fiber optic cable. SC connectors. (May require -RMD, -BLANK)
CWDM-2000-4	Coarse Wave Division Multiplexer for 1470, 1490, 1510, 1530 or 1550, 1570, 1590 and 1610nm. Supports up to 4 wavelengths or channels per fiber optic cable. SC connectors. (Specify wavelengths) (May require -RMT, -BLANK)
CWDM-1A-1D-xxxx	Coarse Wave Division Multiplexer, 1 Channel ADD & DROP for 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Unit will Drop and then Add a CWDM wavelength. SC connectors. (Specify wavelength for xxxx) (May require -RMT, -BLANK)
CWDM-2A-2D-xxxx-xxxx	Coarse Wave Division Multiplexer, 2 Channel ADD & DROP for 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Unit will Drop and then Add a CWDM wavelength. SC connectors. (Specify wavelength for xxxx) (May require -RMT, -BLANK)
CWDM-1A-xxxx	Coarse Wave Division Multiplexer, 1 Channel ADD for 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Unit will Drop and then Add a CWDM wavelength. SC connectors. (Specify wavelength for xxxx) (May require -RMT, -BLANK)
CWDM-1D-xxxx	Coarse Wave Division Multiplexer, 1 Channel DROP for 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Unit will Drop and then Add a CWDM wavelength. SC connectors. (Specify wavelength for xxxx) (May require -RMT, -BLANK)
WDM-MM-ST	Wave Division Multiplexer, 850 and 1300nm Multi-mode, ST Connectors
WDM-SM-FC	Wave Division Multiplexer, 1300 nm and 1550 nm Single Mode, FC Connectors (Optional -ST or -SC connectors)
SPLIT50/50	Optical Splitter, 50/50 Gould
SPLIT50/50CWDM	Optical Splitter, 50/50, CWDM Band
FiberSwitch-1x2	1 by 2 CWDM Fiber Switch, Singlemode, 0 - 5 VDC activation (Specify ST, FC or SC connectors) (May require -RMT, -BLANK)
-RMT	Triple Rack-mount Kit (1 kit)
-RMD	Dual Rack-mount Kit (1 kit)
-BLANK	Blank panel for rack-mounting kit
FSW-KSTST-WB	A/B Protection Switch,ST/UPC Connectors, 1470-1610 nm, CWDM, Single Mode
FVM-19X175	Chassis, 2 FSW plug-in modules 1.75in for 19in rack
ACC-110-48V-A	110 VAC to -48V DC Power Converter Desktop Style

Application Diagram


18 Video, 76 Audio/Intercom & 4 RS232 Inputs
Transmit from Anchor Booth to TX Trailer
8x DVM-2700 2 Channel Video, Audio & Data Fiber, 2 DVM-2200 1 Ch Video, 6 Audio, 2 RS232 Transmitter 4 RU
1470nm
1490nm
1510nm
1530nm
1550nm
1570nm
1590nm
1610nm
8 Ch CWDM Mux
50/50 Splitter
A
B
2x 8 Channel CWDM Mux w/ 2 spare wavelengths
Fiber A
Fiber B
A/B Prot. Switch
8 Ch CWDM Demux
4 Singlemode Fibers w/ Optical Redundancy
Four Singlemode Fiber Required
18 Video 76 Audio/Intercom & 4 RS232 Outputs
Receive from Anchor Booth to TX Trailer
9x DVM-2700 2 Channel Video, Audio & Data Fiber Receivers 4 RU

A/B Fiber Optic Protection Switch

SUMMARY

- 1310, 1550 and CWDM 1470 to 1610nm band-pass
- Dual channel monitors
- Automatic switch-over from Primary to Back-up fiber link
- Automatic or manual operation
- Mounts in standard ADC VAM chassis
- 110/220VAC and 48 VDC operation
- Ideal for mission critical fiber optic circuits

DESCRIPTION

The FSW A/B Protection Switch is a continuation of Multidyne's Fiber Optic Switch (FSW) system. The A/B switch module may be installed in any VAM system chassis and used in conjunction with your other FSW and VAM modules.

The A/B Switch module provides automatic or manual switching between two fiber lines. When a loss of optical signal is detected, it will switch to the alternate path in less than 8 msec. The switch is typically used at the receiving end to switch a transmission to a spare fiber. Upon detecting a signal loss, the switch will automatically switch to a known good fiber. The switching threshold is set at a low power level to maximize the optical power budget available in the user's network.

The dual optical monitors allow the user to know immediately if the alternate fiber has lost its optical signal. The switch is latching, so it will retain its state during a loss of electrical power. An internal microcontroller ensures that the switch does not switch to the opposite state on a power-up.

A manual switch on the front panel allows the user to force the optical switch to either the A or B position or allow it to operate automatically by monitoring the input fibers. The manual switch has a locking toggle to prevent accidental switching. All of the status indicators are also available as relay contact closures on the rear power connector.

APPLICATIONS

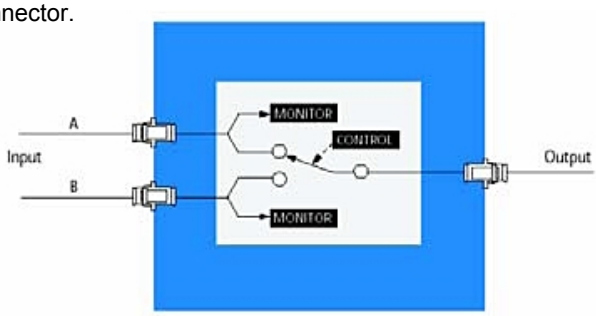


Figure 1
A/B Protection Switch Schematic

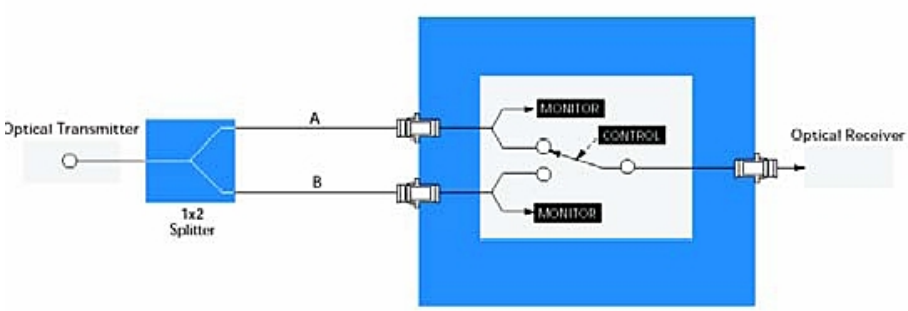


Figure 2
Sample Application of A/B Protection Switch

CONFIGURATION GUIDE

Catalog Number

FSW _____ _____ _____ _____ _____ _____ _____ - _____

Module Option

G	Input front pigtail, output front adapters
H	Input front pigtail, output front pigtails
K	Input front adapter, output front adapters
N	Input front adapter output front pigtails

Input Connector/Adapter

00	Stub end
FC	FC ultra polish
AF	FC angled polish
ST	ST® ultra polish
AT	ST® angled polish
SC	SC ultra polish
AS	SC angled polish
LX	LX.5® angled polish

Output Connector/Adapter

00	Stub end
FC	FC ultra polish
AF	FC angled polish
ST	ST® ultra polish
AT	ST® angled polish
SC	SC ultra polish
AS	SC angled polish
LX	LX.5® angled polish

Splitter Type

LEAVE BLANK	Standard
S	Customer specified

Output Pigtail Length† (in meters)
Example:
0 1 = 1 meter
1 0 = 10 meters

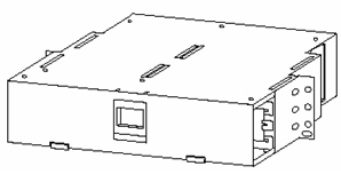
Input Pigtail Length† (in meters)
Example:
0 1 = 1 meter
1 0 = 10 meters

†Use 00 for adapter option

RACK-MOUNT CHASSIS OPTIONS:

3.5 Inch Chassis – 4 Single Plug-In Modules

The 3.5" chassis fits into any 19" rack mounting environment. It accommodates a maximum of plug-in modules, 4 bulkhead plates, 4 blank panels or any combination thereof. Adjustable mounting brackets are provided for 23" mounting environments.



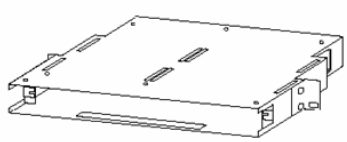
FVM-19X350

Ordering Information

Description	Dimensions (HxWxD)	Catalog Number*
Unloaded chassis for 19" or 23" racks	3.5" x 19" or 23" x 12" (8.89 x 48.26 or 58.26 x 30.48 cm)	FVM-19X350

1.75 Inch Chassis – 2 Single Plug-In Modules

The 1.75" chassis fits into any 19" rack mounting environment. It accommodates a maximum of 2 plug-in modules, 2 bulkhead plates, 2 blank panels or any combination thereof. Adjustable mounting brackets are provided for 23" mounting environments.



FVM-19X175

Ordering Information

Description	Dimensions (HxWxD)	Catalog Number*
Unloaded chassis for 19" or 23" racks; no front door	1.75" x 19" or 23" x 12" (4.45 x 48.26 or 58.26 x 30.48 cm)	FVM-19X175

* This product is available in black; for this option, simply add "-BK" to the end of the catalog number.

SPECIFICATIONS

ELECTRICAL

Input Voltage: .....-37 to -60Vdc

Input Current

@-37 Vdc.....30mA maximum

@-48 Vdc.....25mA nominal

ENVIRONMENTAL

Operating Conditions.....0°C to 50°C

Storage Conditions.....-40°C to 70°C

5% to 95% relative humidity, non-condensing

AGENCY COMPLIANCE

Safety.....UL1459 / CSA 22.2 / EN60950 (CE)

EMC.....FCC Part 15 Subpart B, Class / VEN50082

OPTICAL

Wavelength.....1290 to 1330nm, 1530 to 1570nm

Insertion Loss.....1.9dB maximum

.....1.4dB typical

Return Loss(both ways).....50dB minimum

Isolation.....-60dB maximum

Repeatability.....±0.05dB maximum

.....±0.03dB typical

Polarization Dependent Loss (PDL).....0.3dB maximum

Swiching Speed.....8msec maximum, 5msec typical

Swiching Lifetime.....10 million cycles

Swiching Threshold

Loss of Signal.....-25.0dBm ± 1.5dB

Restoral of Signal (hysteresis)...0.6 to 1.2dB > loss of signal

Vibration Stability.....<0.1dB change

Specifications subject to change without notice.

ORDERING INFORMATION

Fiber Optic Accessories; WDM's, CWDM's, Add/Drop & Protection Switches (SIN 58-6)

CWDM-2000-18	Coarse Wave Division Multiplexer for 1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Supports up to 18 wavelengths or channels per fiber optic cable. SC connectors. Requires the NEW corning SMF-28E CWDM enhanced Singlemode Fiber. (May require -RMD, -BLANK)
CWDM-2000-16	Coarse Wave Division Multiplexer for 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Supports up to 16 wavelengths or channels per fiber optic cable. SC connectors. Requires the NEW corning SMF-28E CWDM enhanced Singlemode Fiber. (May require -RMD, -BLANK)
CWDM-2000-9	Coarse Wave Division Multiplexer for 1310, 1470, 1490, 1510, 1530, 1550, 1570, 1590 and 1610nm. Supports up to 9 wavelengths or channels per fiber optic cable. SC connectors. (May require -RMD, -BLANK)
CWDM-2000-8	Coarse Wave Division Multiplexer for 1470, 1490, 1510, 1530, 1550, 1570, 1590 and 1610nm. Supports up to 8 wavelengths or channels per fiber optic cable. SC connectors. (May require -RMD, -BLANK)
CWDM-2000-4	Coarse Wave Division Multiplexer for 1470, 1490, 1510, 1530 or 1550, 1570, 1590 and 1610nm. Supports up to 4 wavelengths or channels per fiber optic cable. SC connectors. (Specify wavelengths) (May require -RMT, -BLANK)
CWDM-1A-1D-xxxx	Coarse Wave Division Multiplexer, 1 Channel ADD & DROP for 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Unit will Drop and then Add a CWDM wavelength. SC connectors. (Specify wavelength for xxxx) (May require -RMT, -BLANK)
CWDM-2A-2D-xxxx-xxxx	Coarse Wave Division Multiplexer, 2 Channel ADD & DROP for 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Unit will Drop and then Add a CWDM wavelength. SC connectors. (Specify wavelength for xxxx) (May require -RMT, -BLANK)
CWDM-1A-xxxx	Coarse Wave Division Multiplexer, 1 Channel ADD for 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Unit will Drop and then Add a CWDM wavelength. SC connectors. (Specify wavelength for xxxx) (May require -RMT, -BLANK)
CWDM-1D-xxxx	Coarse Wave Division Multiplexer, 1 Channel DROP for 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Unit will Drop and then Add a CWDM wavelength. SC connectors. (Specify wavelength for xxxx) (May require -RMT, -BLANK)
WDM-MM-ST	Wave Division Multiplexer, 850 and 1300nm Multi-mode, ST Connectors
WDM-SM-FC	Wave Division Multiplexer, 1300 nm and 1550 nm Single Mode, FC Connectors (Optional -ST or -SC connectors)
SPLIT50/50	Optical Splitter, 50/50 Gould
SPLIT50/50CWDM	Optical Splitter, 50/50, CWDM Band
FiberSwitch-1x2	1 by 2 CWDM Fiber Switch, Singlemode, 0 - 5 VDC activation (Specify ST, FC or SC connectors) (May require -RMT, -BLANK)
-RMT	Triple Rack-mount Kit (1 kit)
-RMD	Dual Rack-mount Kit (1 kit)
-BLANK	Blank panel for rack-mounting kit
FSW-KSTST-WB	A/B Protection Switch,ST/UPC Connectors, 1470-1610 nm, CWDM, Single Mode
FVM-19X175	Chassis, 2 FSW plug-in modules 1.75in for 19in rack
ACC-110-48V-A	110 VAC to -48V DC Power Converter Desktop Style

4 Ch Optical Wavelength Re-mapper & Multiplexer

SUMMARY

- Multiplex 4 Duplex Optical LAN/WAN High Speed Signals onto *ONE* fiber
- Individual Channel Bandwidth from 20K to 1.2Gbps
- Transmit Synchronous and Asynchronous Data Up to 40KM
- 100% Protocol Independent I/O
- Single Fiber System
- Uses CWDM Technology
- Plug and Play
- No Bandwidth Penalty
- Applications include Telco CO-CO Multiplexing, Telco Fiber Optic Feeder, Enterprise and Corporate Networks, Leased Fiber Networks, Mixed Protocol Multiplexing and Military Tactical Communications

DESCRIPTION

The OM-1200 Series is a fiber optic, protocol independent multiplexer that is designed to multiplex up to 8 Singlemode and/or multimode digital optical signals over one Singlemode fiber.

Each I/O port can accept synchronous and asynchronous digital optical signals between 20K and 1200 Mbps, such that a 4 channel OM-1200 has the equivalent bandwidth of one SONET OC-96 signal. The OM-1200 can transmit multiplexed signals up to 40 KM via only one single mode fiber.

Using automatic gain control and state-of-the-art multiplexing, combining with CWDM technologies, the OM-1200 is a plug and play device. The OM-1200 features protocol independent I/O ports which introduce no bandwidth penalty or excessive transmission delay to the I/O protocol.

Protocol independent ports enable users to re-configure an entire network without re-configuring the OM1200. For example, a Singlemode 100M Ethernet I/O connection can be changed to a single mode OC-12 connection simply by disconnecting the 100M Ethernet from the OM 1200 and connecting the OC-12 signal to the OM1200.

The OM-1200 is ideal for high speed leased fiber, Telco feeder, SCADA, Enterprise and Corporate Networks. The OM-1200 multiplexes SONET OC-1, OC-3, and OC-12, SDH STM-1 and STM-4, 100M Ethernet, Gigabits Ethernet, DS3, E3, CEPT-1, FDDI, ESCON, and many other standard or proprietary digital optical signals.

CONFIGURATION INFORMATION:

Model	Description
OM-1200-XX-YY	4 Channel Optical Multiplexer
I/O Group	XX = 01 850 nm MM 03 1300 nm SM 05 1550 nm SM
Composite Connectors	YY = ST / SC / FC

* Please consult factory for additional models and specifications

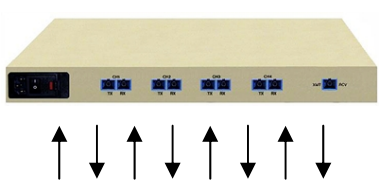
SPECIFICATIONS

System			**OM Transmitter**	
Error Rate	1 in 10_{10}		Transmitters Wavelength Speed	CWDM Lasers 1510, 1530, 1550, 1570nm 0 to 1200 Mbps x 4
I/O Channel Indicators	4 PWR TX Ch 1-4		Receiver	PIN
Data Rate Protocol SNMP	RX Ch 1-4 20K to 1200 Mbps per Channel Independent Option		Wavelength Power Budget	1470, 1490, 1590, 1610nm 18 dB SM
			Distance	50 Km
Environment			Connectors	SC / ST / FC
Operating	0_0C to 74_0 C			
Storage	-40_0C to 95_0 C		**OM Receiver**	
Humidity	95% Non-Condensing		Transmitters Wavelength Speed	CWDM Lasers 1470, 1490, 1590, 1610nm 0 to 1200 Mbps x 4
			Receiver	PIN
Power			Wavelength Power Budget	1510, 1530, 1550, 1570nm 18 dB SM
AC	90-240 VAC, 47-63 Hz		Distance	50 Km
DC	-48 VDC (Optional)		Connectors	SC / ST / FC
Power	40 Watts			
Physical			**Data Interface**	
Dimensions	19” x 1.75” x 10”		Telecom	OC1-OC24, STM1-STM16
			Data-com	FDDI, ATM, ESCON
			LAN/WAN/MAN	Gb Ethernet, Fiber-Channel

ORDERING INFORMATION

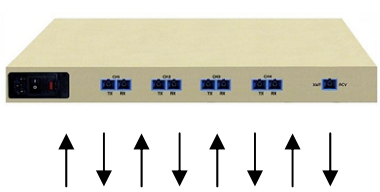
OM	4 Channel Optical Wavelength Re-mapper & Multiplexer, DC+-1,200 Mbps, 1 Fiber
OM-120013ST/ST	4-channel duplex optical MUX, DC-1,200 Mbps, 1310 MM/SM, ST/ST, one fiber
OM-120013ST/FC	4-channel duplex optical MUX, DC-1,200 Mbps, 1310 MM/SM, ST/SC, one fiber
OM-120013ST/SC	4-channel duplex optical MUX, DC-1,200 Mbps, 1310 MM/SM, ST/FC, one fiber

Application Diagram for OM-1200 Optical Wavelegth Re-mapper & Multiplexer System



OC1-OC3-OC12-OC24
STM1-STM2-STM4
10M-100M-1000M
DS3-FDDI-ESCON

Singlemode Fiber up to 50 Km



OC1-OC3-OC12-OC24
STM1-STM2-STM4
10M-100M-1000M
DS3-FDDI-ESCON

10 by 1 Serial Digital Video & AES/EBU Audio Routing Switcher

SUMMARY

The **DAS-1000 10 BY 1 Serial Digital Video and AES/EBU Routing Switcher** supports vertical interval switching of 1 video and up to 3 AES/EBU or analog audio channels on a 10 by 1 matrix. The unit includes 1 video and 2 audio break-aways, 350 meter cable equalized video inputs and 2 re-clocked video outputs. The unit supports 110 Ohm balanced AES/EBU audio. The unit supports 143, 177, 270, 360 and 540 Mbit/sec SMPTE 259M Serial Digital Video and complies with SMPTE RP 168 Vertical Interval Switching.

Remote Control Panels are optionally available which operate at distances of up to 3000 feet over a standard audio cable without an external power source. Power is supplied to the remote panels through the control cable. The switcher also supports RS-232 remote control through a modem or dumb terminal.

- Supports 143, 177, 270, 360 and 540 Mbps SMPTE 259M Serial Digital Video.
- Vertical interval switching per SMPTE RP 168-1993.
- Supports up to 3 channels of 110 Ohm balanced AES/EBU or Analog Audio.
- Optional remote control panel.
- RS232 serial control port, standard.

SPECIFICATIONS

VIDEO

Input Level: 800mV
Impedance: .....75 Ohms
Input Return Loss.....>15 dB to 270 MHz
Data Rate.....540 Mbps, maximum
Output Level:.....800mV
Equalization, automatic.....350 meters
Connector .....BNC

AES/EBU AUDIO

Input Level: .....0.2 to 7Vp-p, AES3
Impedance .....110 Ohms
Connector: DB-37
Adapter: .....optional screw terminal adapter
Frequency:.....28 to 54 KHz
Output Level:.....4Vp-p, +/-1Vp-p

Specifications subject to change without notice.

VIDEO and STEREO AUDIO PASSIVE SWITCHERS

SUMMARY

- The SW-5S Video and Stereo Audio Passive Switcher enables the selection of one of five video and stereo audio sources.
- The SW-10S Video and Stereo Audio Passive Switcher enables the selection of one of ten video and stereo audio sources.
- The unselected video inputs are terminated into 75 Ohms and the unselected audio inputs are terminated into 600 Ohms.
- The SW-5S features 12 XLR audio connectors and 6 BNC video connectors. · The SW-10S features quick-release, pluggable, screw terminal audio connectors and 11 BNC video connectors.

Both Switchers are available in table top and rack-mount configurations. · Designed and manufactured in the U. S. A.

Rear View of SW-5S (top) and SW-10S (bottom)

10 BY 1 VIDEO and AUDIO SWITCHER

SUMMARY

- Vertical interval sw itching of 1 video and up to 3 audio channels w ith a 10 by 1 matrix.
- Includes 1 video and 2 audio break-aw ays.
- **Clamped** video inputs and output.
- **30 MHz video bandwidth,** ideal for HDTV, NTSC, PAL and SECAM video signals.
- Front panel video and audio gain adjustments.
- Loop-through video inputs, **4 video outputs** and optional **audio interface panel for XLR connectors**.
- **3 LED VU meters,** one for each audio channel (optional).
- Internal **12 Watt audio power amplifier** to selectively monitor the Left, Right, Left + Right and Auxiliary audio channels with a **Push Button Volume Control.** An external speaker can be connected to the audio monitor output (optional**)**.
- The **AutoCompare** or **chop** feature allow s the user to easily **compare** the **level, horizontal phase & subcarrier phase** of tw o video channels. In the AutoCompare mode, the Sw itcher w ill alternately switch betw een tw o video channels. The resulting output is the equivalent of both video signals superimposed over each other.
- **Remote Control Panels** are optionally available w hich operate at **distances** of up to **3000 feet** over a standard audio cable **without** an **external power source**. Power is supplied to the remote panels through the control cable.
- Supports RS-232 remote control through a modem or dumb terminal. The Sw itcher gives the user prompts for control and displays the output status.
- Switchers can be ganged together to form a **10 by N** and a **N by 1** matrix for larger applications w here more inputs or outputs are required such as **RGB** or **Component** V**ideo**. The 10X3 Adapter Panel w ith XLR connectors is optionally available to bridge the audio inputs of 3 or more VAS-1000 sw itchers for a 10 by 3+ matrix.
- AC operation for 115 and 230 VAC.

VAS-1000 Rear Panel shown w ith XLR Audio Connector Interface

SPECIFICATIONS

Video Performance:

Signal to noise..... > 70 dB
Crosstalk..... < -65 dB
Dif f erential gain..... < +/- 0.1 %
Dif f erential phase..... < +/- 0.1 °
Frequency response to 8 MHz..... < +/- 0.1 dB
3 dB Bandwidth..... 30 MHz
Ringing..... < +/- 0.5 %
Tilt ..... < +/- 0.2 %
Gain, adjustable.....Unity , +/- 2 dB
Dif f erential input v oltage ..... +/- 1 Volt
Video output impedance..... 75 Ohms

Audio Performance:

Signal to noise..... > 100 dB
Frequency response to 20 Hz to 20 KHz..... < +/- 0.05 dB
Distortion.....< 0.05 %
Gain.....Unity , +/- 6 dB
Maximum input & output lev el, 600 Ohm termination..... + 24 dBm
Audio input & output .....Balanced, 37 pin D-ty pe con.
Audio output impedance, balanced ..... 50 Ohms
Audio input impedance..... 80 KOhms
RS-232 remote control connector ..... 9 pin D-ty pe
Remote control panel connector..... 3 screw terminals, quick release
Power dissipation..... < 12 Watts
AC operation..... 115 or 230 VAC
Operating temperature..... 0 to +50 °C
Dimensions (L x W x H) ..... 7.75” x 19" x 1.75"

VAS-422 10 By 1 Machine Control and RS-422 Data Routing Switcher

- Supports **4 w ire RS-422** data protocols and **Machine Control**.
- Supports **stand-alone** or **slave operation** w ith a master VAS-1000 routing sw itcher.
- Operates from a 110 or 220 VAC w all-mount pow er supply.

ORDERING INFORMATION

VAS-1000-3AUD-VU, 10 by 1 Video & 3 Ch. Audio Switcher w/ VU Meters & Audio Monitoring Power Amp.
VAS-1000-3AUD, 10 by 1 Video and 3 Channels of Audio Switcher.
VAS-1000-VID, 10 by 1 Video Only Switcher.
VAS-1000-REM, Remote Control Panel for VAS-1000.
-AUD, 10 by 1 Analog Audio Switcher Board.

VAS-422, 10 by 1 RS-422 Data and Machine Control Switcher.
AEA-1, Mono XLR Audio Interface Panel.
10X3, 10 by 3 Audio Bridging Adapter Panel with XLR connectors.

EOS-4000 FIBER OPTIC SWITCHER

SUMMARY

- Scalable matrix sizes from 32 by 32 up to 288 by 288 ports
- Switches digital signals up to 4.25 Gb/s
- Full duplex switching capacity up to 612 Gb/s
- Hot-pluggable SFP transceivers on all port cards
- Port cards, power supplies and fans are hot-swappablefor maximum flexibility
- GUI software allows user to build configurations by dragging and dropping ports
- Provides point -to-point, multiple loops, and multicast topologies simultaneously

Introduction

Our EOS-4000 switch is a versatile, multi-purpose, non-blocking, transparent switch that provides high-speed switching between ports with minimal effect on overall network latency. The EOS4000 series is capable of switching digital signals up to 4.25 Gbps with any of its 288 ports, all in a compact sizes from 1 RU up to 9 RU chassis.

The EOS-4000 is designed to accept up to three modular port cards with up to forty-eight Small Form-Factor Pluggable (SFP) transceiver modules per port card. Each SFP transceiver module provides the physical ports for one input-output pair. Different types of SFP transceivers support a variety of network configurations:

• 2.5, 2.125, 1.25 and 1.0625 Gb/s link rates available now with 4.25 Gb/s transceivers coming soon
• 850, 1300 and 1550nm optical media
• HSSDC2 copper media
• Links up to 50 kilometer

The **EOS-4000** comes equipped with hot-swappable power supplies, fans and port cards to allow users to quickly replace parts without affecting system investigateperformance. A CompactFlash module acts as the unit's disk drive for the controller's CPU and is capable of being swapped out as well. The EOS-4000's controlling software and non-volatile configuration data resides on the module.

Capabilities

EOS configuration commands are sent via a 10/100 Ethernet connection using a simple intuitive command set. With regard to network testing, some of the most significant capabilities are:

Automatic and Remote Reconfiguration and Fault Emulation.

Quickly establish links, emulate optical power break with and without path failures, make topology changes, and re-route point-to-point, loop, or multicast connections.

Dynamic Device Testing

Through out-of-band control the switch can simulate faults; also, the capability exists to identify improperly operating devices.

Increased Resource Sharing Capabilities

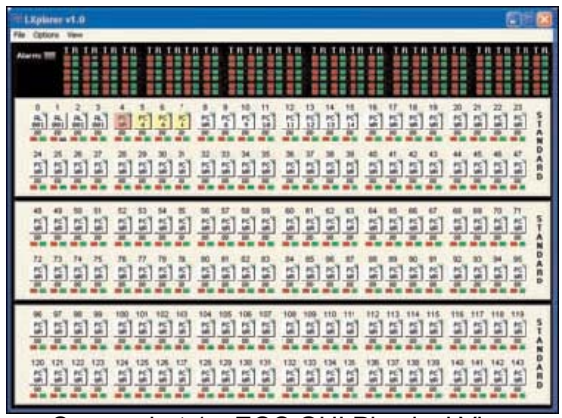
Switched connectivity between local or remote—up to 100 km—facilities and between devices allows testing without physically moving equipment.

Cable and Hardware Diagnostics

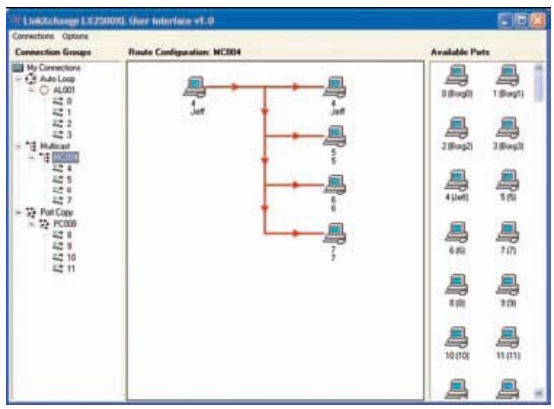
Quickly isolate interconnect problems; investigate whether the network can provide reliable data transfer over specified distances without touching cables; and test hardware configurations such as hubs.

EOSXplorer™ Software Interface

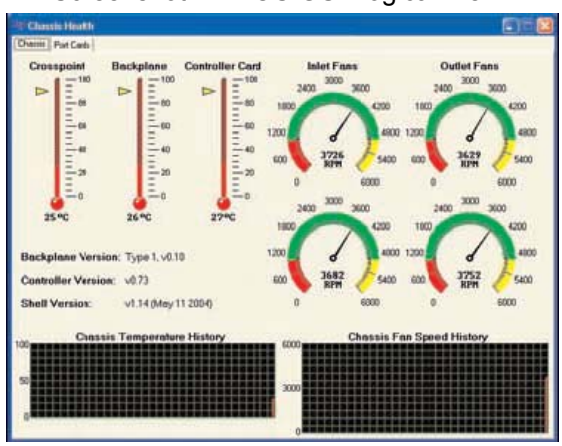
The EOS GUI Software greatly simplifies config- uration management. Configurations can be saved and restored on-the-fly—which means only having to create that configuration once! EOS GUI also provides the user with real-time monitor- ing of the unit's chassis and port cards. Configurations Simplified With EOS GUI, manual rewiring is a thing of the past. There are two methods whereby configurations can be modified and created. In the Physical View (see Screen-shot 1), the usercan simply click on a port and drag it to any available port. The user can select the Highlight feature by right-clicking on a given port to determine the ports it is currently connected with. In the Logical View (see Screenshot 2), the user is presented with a highly intu- itive Windows Explorer-like interface for creating and managing configurations. Drag & drop functionality makes configuration a breeze. Monitoring Made Easy EOS GUI allows the user to monitor the health of the switch chassis and port cards. Forthe chassis (see Screenshot 3); temperature readings are available for the crosspoint, backplane, and controller card, Fan speeds are depicted as well. Historical data is also logged on a chart, allowing the user to determine the switch state during a specified period of time. For the port cards, the temperature and historical charts are similarly available (see Screenshot 4).



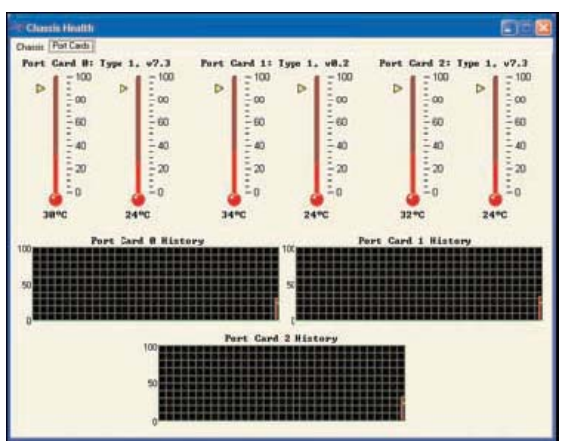
Screenshot 1—EOS GUI Physical View



Screenshot 2—EOS GUI Logical View



Screenshot 3—EOS GUI Chassis Health Monitor



Screenshot 4 EOS GUI Port Card Health Monitor

EOS-4288 Hardware Specifications

Physical Dimensions
With handles and mounting ears:
19.05" wide by 15.75" tall by 12" deep**;** 9 RU
Box only:

Weight: 43 pounds (19.5 kg)

Power Requirements:
Input voltage**:** 90-132 or 180-264 VAC, 47-63 Hz
Input power: 370 watts max

Storage Temperature Range: -40° to +85° C Operating
Temperature Range: -10° to +60° C Storage Humidity Range:
5% to 95% (noncondensing)
Operating Humidity Range: 10% to 90% (noncondensing)Data
Rates: Up to 4.25 Gbps (port card dependent) Total Bandwidth: 612 Gbps

Video Applications for All Optical Switching

SUMMARY

The Multidyne Fiber Optic Switcher (FOS) is ideal for video broadcast, production, security and other video applications requiring transmission, switching and replication of high quality optical signals. The FOS is available in matrix sizes starting at 32 by 32, fully scalable to 256 by 256. It delivers guaranteed, non-blocking, deterministic switched video connections on fiber optic links.

Key features include:

- ¾ Transparent optical switching
- ¾ Supports any analog or digital formats
- ¾ 32x32, 64x64, 128x128, or 256x256 ports
- ¾ Optical Multicast
- ¾ Simple web-based or script-based control

The Fiber Optical Switcher revolutionizes how video is distributed and managed. The FOS is based on sate-of-the-art field proven photonic switching technology. Laser light is switched in a pure optical format, without electrical conversion, allowing the FOS to support transparent connections compatible with any video or data format including uncompressed HD video at 1.5 Gbps. Also, since the switching is done optically, the FOS eliminates video degradation. With a traditional electrical switcher, Electrical to Optical (EO) and Optical to Electrical (OE) conversions are required which cause signal degradation and jitter.

The FOS supports a wide range of formats from 19.4 Mbps ATSC through 1.5 Gbps HDTV as well as NTSC, PAL, SECAM, SMPTE 259M Serial Digital (SDI) Video, broadband analog, L-Band, IF, and many more. The optical switcher will also transparently switches CWDM and DWDM signals.

An optical multicasting feature permits any input to be replicated and simulcasted to multiple receivers. This provides the ability to send one fiber optic source to multiple destinations. The system switches and simulcasts any video format over distances in excess of 20 kilometers.

The FOS has been designed to operate in the field to support applications requiring reliable, high-quality video distribution such as:

- ¾ Mobile production trucks, sports venues and professional video facilities
- ¾ Campus video and surveillance networks
- ¾ Remote video monitoring
- ¾ Government and military

Optical layer protection and fault tolerant switching is available for critical, non-stop applications.

Video Switching

The Multidyne Fiber Optic Switcher provides any-to-any optical switching of video signals. In broadcast, CATV or sports venues, any camera can be routed to any monitor local or remote. Signals can be amplified and power balanced as needed. They can also be replicated to support multicast or simulcast applications. In video surveillance networks, the FOS can be used to scan multiple cameras displaying the video at a centralized security monitor.

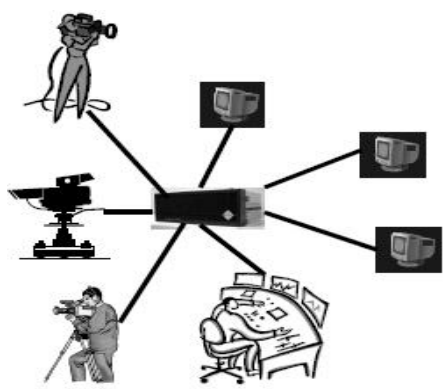


Figure 1, Video Networking

Corporations, hospitals, or education and government organizations can use the FOS to route and simulcast IP TV signals, distance learning presentations, and other live or prerecorded video to remote locations.

RGB and VGA Switching and Transport

Multi-fiber analog (AM and FM) based video modems produce loss in video quality such as color convergence problems, color shifting, smearing, and edge blurring possibly due to the limitations of the technology. Transporting detailed RGB and XVGA graphics over fiber optics results in minimal distortion of the original signal.

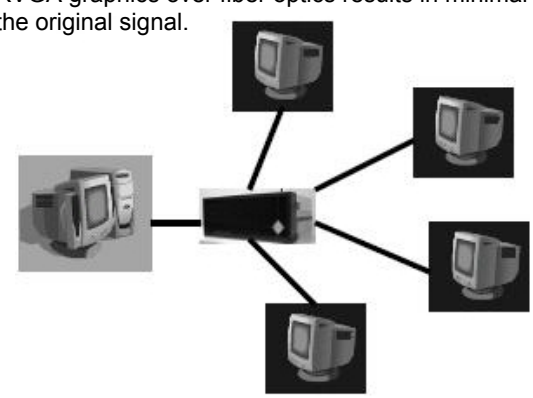


Figure 2, RGB and VGA switching or multicast

The FOS provides transport and switching of RGB and XVGA signals plus various configurations of H and V sync over 3 fibers. This enables remoting of a monitor from the video source over high-quality fiber optics immune to electrical noise in the transmission path. This noise immunity is critical in applications such as commodity and stock exchanges, medical and MRI displays, advertising and signs, sporting and concert video displays, video walls, digital cinema, radar displays, air traffic control, and military information displays.

Video Multicast

Optical Multicasting replicates any input signal to multiple receivers without optical to electrical conversion. This allows for simulcast distribution of video for applications such as content delivery networking, remote monitoring and distance learning applications.

Automated Optical Patch Panel

The Multidyne FOS Fiber Optic Switcher can be used as an automated patch panel to consolidate equipment connectivity, simplify changes and reduce cable clutter. The automated optical patch panel allows for a cable-once, reconfigure many times mode of operation.

Web-browser or Script-based Control

Web-browser access is provided for simple control and configuration of the optical switcher. In addition, the unit may be controlled through automated scripts. Multiple configurations can be stored and quickly reloaded to provide different equipment connectivity.

Cost Savings

The FOS is extremely cost effective for any applications requiring thirty-two or more switched optical ports. The FOS eliminates the need for expensive video transceivers to convert signals between electrical and optical formats. Switching the signals in optical format can save thousands of dollars per port in transceiver costs.

In addition, the FOS provides dramatic operational savings as an automated patch panel, eliminating tedious and error prone cabling and re-cabling of fiber optic connections between video devices as application and configuration needs change.

SPECIFICATIONS

General

Product	Switch Size	Available Paths
FOS 32	32x32 Non-blocking	1,024
FOS 64	64x64 Non-blocking	4,096
FOS 128	128x128 Non-blocking	16,384
FOS 256*	256x256 Non-blocking	65,536

* 23-inch configuration only, 19-inch available soon for FOS 32, 64 & 128

Optical Specifications

- Fiber Type: Single Mode
- Optical Connectors: MPX, 8 fibers

Note: A patch-panel with choice of connectors (ST, ST duplex, SC…) is available as an option.

- Wavelength Independent: 1260 - 1625 nm
- Bit rate Independent: tested to > 40 Gbs
- Format (digital or analog) agnostic
- Input power: Maximum: +10 dBm; Minimum: -27 dBm
- Insertion loss: Typical: 1.7 dB; Maximum: 3.5 dB
- Return loss: 35 dB
- PDL: Typical: 0.1 dB; Maximum: 0.3 dB
- Static Cross talk: Typical: -80 dB; Maximum: -60 dB
- Path stability: <0.5 dB
- Repeatability: ±0.25 dB

Electrical Interfaces

- Craft Interface: RS232-C/9600 Baud, 8 bit / 1 stop/ no parity, DB9
- Machine Interface: Telnet, Ethernet 10/100, RJ45

Power

- Input Voltage: -42VDC to -56VDC

Note: An AC power supply is also available as an option.

- Power Dissipation: <200W (for 256x256)
- Input Current: <5A
- Connector: 10-32 Post, 12AWG

RAS

- Reliability MTBF: > 65,000Hrs (7 yrs.)
- Serviceability: Hot Swappable FRU
- Indicators: Power (Green), Ready (Green), Active (Green), Alarm (Red)

Physical Specifications

- Dimensions (HxWxD)
  - Rack-mountable 19-inch configuration: 8.75 x 19 x 12 in. (Available soon)
  - Rack-mountable 23-inch configuration: 8.75 x 23 x 12 in.
- Weight: 60 lbs. max

Tactical Military Fiber Optic Cable and Spool Assemblies

Delphi/Packard Hughes
Connector and Fan-out Cable

SUMMARY

- Custom military grade, tactical fiber optic cable assemblies with up to 12 fibers.
- Delphi-Packard Hughes Hermaphroditic, US Army TFOCA-II® or ITT Industries Cannon FOMC multi-channel tactical fiber optic connectors.
- Standard lengths include 500, 1000 and 2000 feet. Custom lengths available.
- Crush-resistant and resilient with a thick layer of Aramid Strength Members.
- Polyurethane jacketed for abrasion, cut and chemical resistance.
- Re-enforced Kevlar jacket strong enough to withstand the weight of a truck.
- Interfaces available for the complete MULTIDYNE fiber optic product line.
- Ideal for temporary field production, ENG, sporting events and military operations.
- The system is available with cable breakouts into standard ST, SC or FC type connectors with a panel- mount hermaphroditic connector (pictured above). Hand tighten cable break-outs (non panel-mount) are available.

TFOCA-II® Tactical Connector and Fan-out Cable

TFOCA-II® to FOMC Fiber Optic Cable Adapter

Multi-Channel Fiber Optic Cable Assemblies

Multidyne provides custom cable assemblies for virtually any applications. Our stringent quality system, certified to MIL-STD-790, ensures the highest levels of workmanship and performance available today in every cable assembly built.

Cables can be built with:

- TFOCA connectors
- TFOCA-II® connectors
- TFOCA-III™ connectors
- FOMC connectors
- THD connectors
- FS3H connectors
- FS12H pier side connectors
- M28876 connectors
- D38999 connectors
- MIL-ST, or any commercially available connector.

Multidyne cannot support virtually every connector standards. In addition to 100% optical performance testing, Multidyne can also provide value-added services such as thermal cycling, high- temperature aging, and other post-build environmental testing.

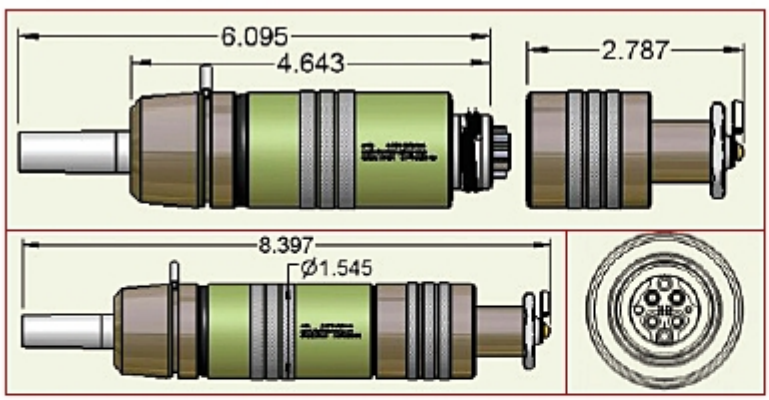
- Multidyne uses CECOM approved sources for TFOCA Cable Assemblies.
- Multidyne uses CECOM approved source for TFOCA-II® Cable Assemblies.
- Multidyne assemblies are certified to MIL-STD-2042 for shipboard assemblies.

Every Multidyne cable assembly is covered by a 1-year warrantee from the date of delivery.

"TFOCA-II ® is a registered trademark of Amphenol Fiber Systems International."
"TFOCA-III is a trademark of Amphenol Fiber Systems International."

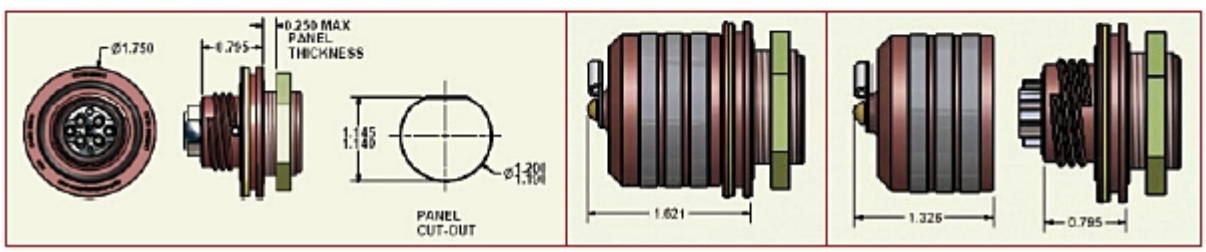
TFOCA II Connector Specification and Features

TFOCA/16 PLUG



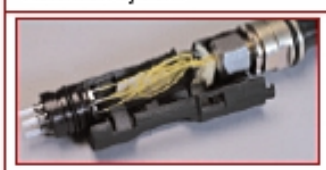
FEATURES	
Ferrule	2.5mm diameter ceramic ferrule
Exterior Parts	Aluminum-Zinc/Nickel
	Stainless Steel 303, 316 & Brass options
Interior Parts	Aluminum-Annodize/Chemfilm
Hardware	Stainless Steel, Passivated
Seals	Nitrile
Boot	Butyl
Alignment Sleeves	Ceramic split sleeve

TFOCA/17 JAM NUT RECEPTACLE

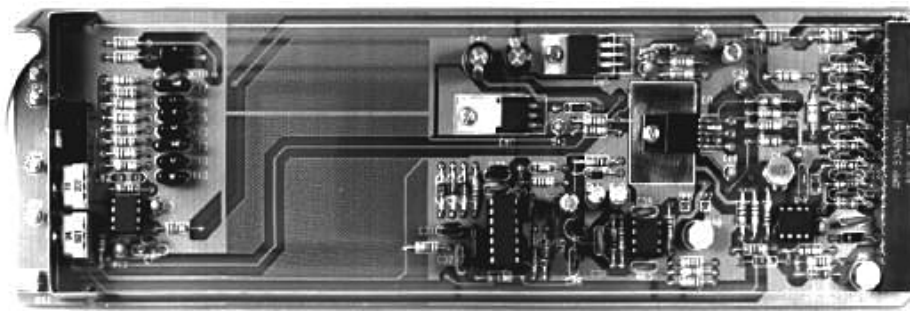


SPECIFICATIONS

Description	METRIC / STANDARD
Insertion Loss (Multi mode)	0.30dB - Tipical, 0.75dB - Maximum
Insertion Loss (Single mode)	0.40dB - Tipical, 0.75dB - Maximum
Back reflection (single mode –UPC polish)	-50dB - Tipical, -40dB - Maximum
Operating temperature	-54°C to +71°C
Storage temperature	-57°C to +85°C
Mating Durability	2000 cycles min, TIA -455-21
Impact	Method B, EIA / TIA-455-36
Twist	±90° rotation, one cycle/5sec, 1000cycles, TIA-455-36
Cable Sealing Flex	Procedure I, EIA/ TIA-455-1
Cable Retention	400lbs min, TIA-455-6
Crush Resistance	450lbs, TIA-455-26
Temperature Life	250Hr, 85 ±2°C
Terminal Shock	Schedule B-0, 10cyc, 85°C, -62°C, EIA/TIA-455-71
Physical Shock	Condition C, 5 shocks/axis, TIA-455-14
Vibration	Conditions 3, 4 @10G, EIA/TIA-455-11
Humidity	Type2, EIA/TIA-455-5
Salt Spray	Condition C, EIA/TIA-455-16
Altitude Immersion	TIA-455-15
Fluid Immersion	All Fluids subject to 24hours, EIA/TIA-455-12
Water Pressure	1.0M 24hours
Freezing Water Immersion	Method A, Procedure 1, mated connectors, EIA/TIA-/455-98
Ozone Exposure	Mated Connectors, TIA-455-189
Flammability	EIA/TIA-364-81
Mud Test	5min, immersion, 10cycles
Fungus Resistance	28days, EIA/TIA-455-56
Nuclear, Biological & Chemical Decontamination	Guideline per MIL-HDBK-783
Electromagnetic Effects	IEEE-299, H-Filed 150kHz, 14MHz, Plane wave 400Hz, 1GHz, Microwave 10GHz

FEATURES	BENEFITS
Inter-operable, inter-matable and even inter-changeable in accordance with MIL-PRF-83526/16, /17 and M29504/16.	Backward and forward compatible with legacy TFOCAII®. Uses same assembly procedures and tools.
MSHP/16 Termini	Sealed fiber optic termini, moving wire seal and series of o-rings eliminates penetration of dust and moisture.
Captive Split Ceramic Alignment Sleeves within removable Insert Cap.	Affords single mode performance and conforms to impact, mechanical shock and vibration requirements.
Enhanced Kevlar® Retention System.	Supports 400lb. cable retention without degradation of optical signal.
 Field Repairable Using Existing Parts.	Reusable split sleeve provides fiber optic service loop and snaps together without o-rings.
Hermaphroditic Dust Cap – Standard on Plug.	Plug and/or receptacle dust caps connect together to prevent dust and moisture penetration.
Hermaphroditic Design.	Any plug-to-plug fiber optic cabling system on a reel can be instantly provisioned for male (daisy chain) or female connectivity.
Dry Film Thread Lubrication.	Extends life of mating threads

AUTOMATIC BYPASS & KEEP ALIVE SWITCH to AUTOMATICALLY TEST & ID Four Video Circuit



SUMMARY

· Automatically monitor 4 video channels. If the video signal goes off the air or if the video circuit is inactive, an alternate video signal is switched onto the line automatically. The system uses sync recognition and is not fooled by white noise of off air signals.

· Ideal for Satellite, Microwave, Off-air Antenna and Cable TV Head-end applications. If you loose a video feed, automatically put up an emergency message or alternate video signal.

· Automatically test continuity and performance of video feeds. Switch a test signal and character ID onto the circuit when there is a problem or when it is not in use.

· Front panel LED status indicators.

· High impedance loop-through input for the secondary or test signal input. Loop the secondary inputs of several cards together.

· Low loss switching using RF relays. Program video will loop-through upon power failure.

· Modular design to plug into the MULTIDYNE UTIL-200 and the Grass 8500/8800 trays.

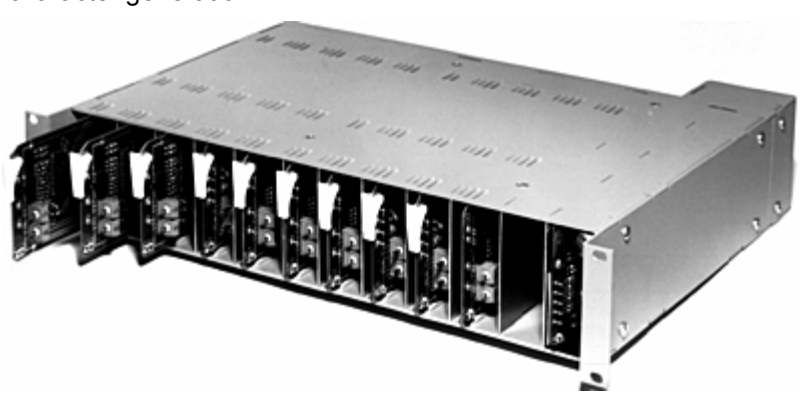
SPECIFICATIONS

INPUT
Nominal Levels
Video .....1 Vp-p
Return loss .....>40 dB
OUTPUT
Video Level .....1 Vp-p
Source termination.....75 Ohms
VIDEO
Frequency (DC to 5MHz).....+/- 0.05dB
Power consumption, MAX. .....<2 Watts
Temperature range.....0-50°C

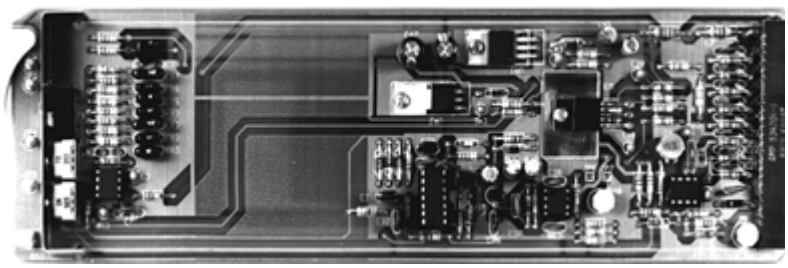
Modular Plug-in Video Character ID Generator

SUMMARY

- 15 column by 7 row upper and lower case alpha-numeric character generation.
- Switch selectable A/B input for program video and test signals.
- Switch selectable bypass of program video and power failure bypass.
- 15 character Vertical Interval Identification for a hidden ID.
- Automatic Lip-sync correction capability when used with the LS-2000 Audio Delay.
- Optioanl audio tone and sweep generator with audio ID tones and Lip-sync.
- Optional time and date display and count-down with audio beeps.
- Motion bar to see Time-Base Corrector freeze-ups.
- RS-232 port for remote operation and control.
- Modular design to plug into the MULTIDYNE™ UTIL-200 and the Grass Valley™ 8500/8800 trays. Available soon for the Leitch™ 880 Series of trays.
- Applications include video feed identification, video messaging, emergency alert systems, weather, ENG, news feed identification and production.



Plugs into the Grass Valley 8500/8800 & the MULTIDYNE UTIL-200 trays



CG-200 Modular Plug-in Video Character ID Generator Card

SPECIFICATIONS

INPUT
Nominal Levels
Video .....1 Vp-p
Return loss .....>40 dB
OUTPUT
Video Level .....1 Vp-p
Source termination.....75 Ohms
Audio Level .....0, +4, +8, +10, +18 dBu
Source termination.....50 Ohms
VIDEO
Differential Gain ..... <0.2%
Differential Phase.....<0.2 °
AUDIO
Frequencies ..... 20, 50, 63, 125, 250, 400, 1K, 2K, 4K, 8K, 10K, 12.5K, 16K, 20K Hz
Sweep ..... 20-20K Hz
Amplitude Accuracy .....+/- 0.25 dBu
Distortion ..... < 0.3 %
Power consumption, MAX.....2 Watts
Temperature range ..... 0-50°C
CHARACTERS
Character Columns 15
Character Rows 7
Pages of Text..... 16
Vertical Interval ID, Characters 15

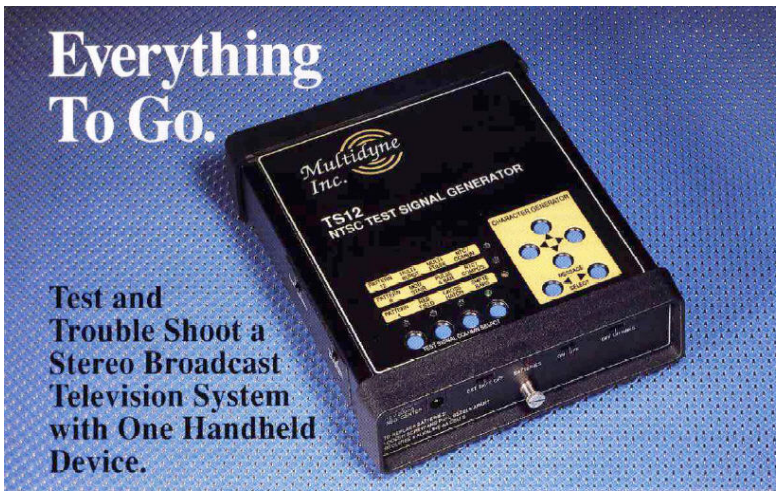
ORDERING INFORMATION

CG-200, Modular Video Character & ID Generator; 16 page battery backed memory; 15 column by 7 character generation; bypass from program to an alternate video source; Vertical Interval ID, Motion bar, alarm output,

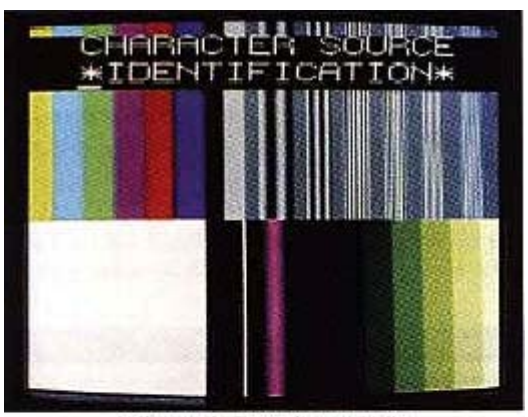
-CLOCK/CNTDWN, Optional Date, Time and Countdown with Audio Beeps.
-TONE Audio Tone and Sweep Generator.

UTIL-200-2RU-AC, 10 Slot, 2RU, Modular Utility Tray, with one 85-265 VAC Power Supply & Line Cord
UTIL-200-2RU-48VDC, 10 Slot, 2 RU, Modular Utility Tray, with one 36-60 VDC Power Supply

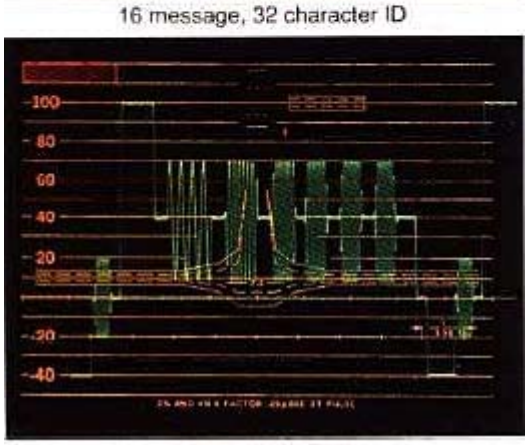
NTSC Test Signal Generators



SUMMARY



16 message, 32 character ID



Signal excellence

	TS 12	TS12-RM
Number of NTSC test signals.	12	12
Black burst output.	✓	✓
I6 message character ID.	✓	✓
Stereo audio tone. balanced. 3 frequencies.	✓	✓
DC operation with 4 AA batteries, up to 12 hours.	✓	
Loop-through of external video & stereo audio.		✓
Automatic by-pass upon the loss of external video.		✓
Insertion of a vertical interval ID into external video.		✓
Lip-sync, audio and video synchronizing signal.	✓	✓

TS12 Series of NTSC Test Signal (generators.

The innovative TS 12 offers up to12 precision test signals, a dedicated black burst output. character source ID and stereo audio tone in a handheld or rack-mounted package. The NTSC test sienals include SMPTE Color Bars. FCC Multiburst, Multipulse, 5MHz Line Sweep. NTC-7 Composite and Combination plus many others. The character generator produces 16 battery-backed messages of 32 characters each. The balanced stereo audio generator provides 3frequencies of tone with a right channel ID and a Lip-sync audio and video svnchronizing signal. The rack-mounted TSI2-RM also includes loop-through of external video and stereo audio, Automatic By-pass upon the loss of external video and insertion of a 16 character vertical interval ID into external video. The TS12 ,will operate on AC with an external supply. external 6-20 VDC, and 4AA cell batteries for up to12 hours, allowing use anywhere. It is an essential tool for the television industry. All products are made in America and carry a year warranty.

ORDERING INFORMATION

Model TS12: for Handheld NTSC Test Signal Generator with12 test signals.

Model TS12-RM: for Rack-mounted NTSC Test Signal Generator with 12 test signals, Automatic By-pass and Vertical Interval ID.

OPTIONS

-VITS Vertical Interval Test Signal option (TS 12 and TS12-RM only).

- MONITOR Monitor Alignment Test Signal Set option (TS12 and TS 12-RM only).

-BLACK 0 IRE Black without Burst for transmitter power measurements option.

-SINX (SIN X)/X Test Signal option TS 12 and TS12-RM only).

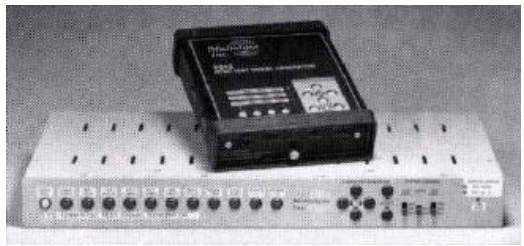
-SPEECH 15 second Recordable Audio Voice Identification (TS12-RM only).

TS12 TEST SIGNAL SET

12 Transmission and Alignment Test Signals: SMPTE Color Bars, Cross Hatch, Red Field. Field Square Wave. NTC-7 Composite, Gated Pulse and Bar, Modulated Stair Step. 5 MHz, Line Sweep. NTC-7 Combination, Multipulse,. FCC Multiburst and a matrix of Color Bars/Multiburst and NTC-7 Composite. The test signal (SIN X)/X is available as an option.

TS12-RM TEST SIGNAL SET

12 Transmission and Alignment Test Signals: SMPTE Color Bars, Cross Hatch, Red Field. FCC Multiburst, NTC-7 Combination, NTC-7 Composite. 5 MHz Line Sweep, Multipulse, Modulated Stair Step. Black Burst, Gated Pulse and Bar and a matrix of Color Bars/ Multiburst and NTC-7 Composite. The test signal (SIN X)/X is available as an option.

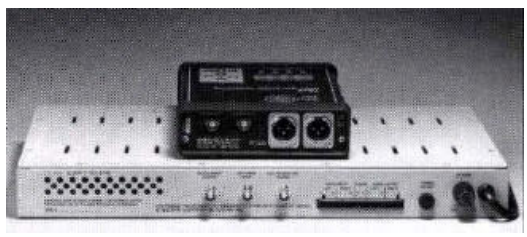


TS12 and TS12-RM Front View

TS12 VITS TEST SIGNAL SET (optional)

The TSI2 VITS option includes vertical interval test signals (VITS). on all test signals. The vertical interval test signals are NTC-7 Composite on line 18 fields 1 & 2 and NTC-7 Combination on line 17 field 1.

Ordering information: -VITS. Vertical Interval Test Signal option(TS12TS12-RM only)



TS12 and TS12-RM Rear View

0 IRE BLACK FOR TRANSMITTER POWER MEASUREMENTS (optional)

A 0 IRE Black without Burst test signal is available as an option to make transmitter power measurements. The 0 IRE Black without Burst test signal is available with the TS 12 and TS 12-RM.

Ordering information: - BLACK, 0 IRE Black wiithout Burst option.

MONITOR ALIGNMENT TEST SIGNALS (optional)

The TS 12 and TS I2-RM are available with special monitor alignment test signals as an option. The monitor alignment test signal set includes a 10% APL Window and 100% APL Window for manual and automatic monitor alignment procedures. Also included is a Cross Hatch signal with Pludge.

Ordering information: - MONITOR, Monitor Alignment Test Signal Set option (TSI2, TS 12-RM only)

LIP-SYNC. SYNCHRONIZE AUDIO AND VIDEO CHANNELS

A Lip-sync feature is available to synchronize the video and audio channels of a video system. The character generator cursor flashes off for one video frame and on for 2 seconds. The 0.5 Hz click in the right audio channel is synchronized with the character generator cursor. The video and audio timing measurements can be made using a standard oscilloscope triggered on the audio click. The Lip-sync feature is available with the TSI2 and TS 12-RM.

Automatic BY-PASS

External video and stereo audio are looped through the TS12-RM under normal conditions. With the Automatic By-pass feature, if the external video is interrupted or lost. the selected test signal, character ID and stereo tone are switched onto the line automatically. If the video link is interrupted. the TS12-RM will automaticallyl test and identify the source of the problem.

VERTICAL INTERVAL ID

The model TS12-RM will insert a 16 character message into the vertical interval of external video on lines 10 through 16. The TS12 will place a 16 character message in the vertical interval of the test signal output on lines 10 through 16. The vertical interval message consists of the first 16 Characters of the ID displayed in the active field.

SPECIFICATIONS

VIDEO SPECIFICATIONS:

Conforms to the RS-170A timing specfication

Video output impedence	75 Ohms
Chrominance to luminance gain ...	<±0.5%
Chrominance to luminance delay ...	<±5 nsec.
Luminance amplitude accuracy ...	<± 1%
Ringing ...	< ± 0.5%
Signal to noise ...	< -77 dB
Differential gain ...	<± 1%
Differential phase ...	< ± 0.6 degrees
Dimensions. TS 12 (LxWxH) ...	6⅞" x 5¾ x 1¾"
Dimensions. TS12-RM (LxWxH) ...	8" x 19" x 1¾"

AUDIO SPECIFICATIONS:

Audio output impedance. balanced ...	50 Ohms
Tone frequency ...	400Hz, 1kHz, 8kHz
Audio output level, adjustable ...	-60dBu to +10dBu
Right channel ID ...	0.5 Hz
Distortion ...	0.1%
DC input range. TS 12	6-20 VDC
Power dissipation ...	1.2 Watts. max.
Battery operation. TS 12	up to 12 hours
AC operation. TS 12	wall-mount AC supply, included
AC operation. TS12-RM ...	117 or 234 VAC

MODULAR NTSC VIDEO, CHARACTER & TONE GENERATOR

SUMMARY

TS-12-CARD

MODULAR NTSC VIDEO, CHARACTER & TONE GENERATOR

- 16 NTSC video test signals including 5 MHz Line Sweep, NTC-7 Composite, NTC-7 Combination, Multiburst, Multipulse and (SIN X)/X.
- Compatible with the **Grass Valley™ 8500/8800** and MULTIDYNE **UTIL-200** Video DA Trays.
- 5 dedicated black burst outputs.
- 10 bit digital video test signal generation exceeding the RS-250C Short-haul specification.
- **95 to 100 IRE RAMP** to measure Signal-to-Noise (S/N) and Signal-to-Quantizing Noise (S/Q) in digital video systems as recommended by ANSI standard **T1Q1.5/91-205R2**. Ideal for Digital Video Fiber Optics and **DS-3** Telephone Compressed Video systems. Option **-RAMP**
- Vertical interval test signals (**VITS**), NTC-7 Composite and NTC-7 Combination, **VM700A™** compatible.
- High, Low and Medium APL with Bounce.
- Field programmable character generator. The message is 32 characters and is retained in a battery-backed RAM for up to 10 years.
- 1 KHz audio tone interfaced through two BNC connectors with a BNC to XLR adapter.
- Lip-sync, audio and video synchronizing signal.
- Applications include Broadcast TV, Electronic News Gathering, Sporting Events, News Remotes, Cable TV, Telephone,
- Distance Learning, Teleconferencing, Satellite, Fiber Optics and Production.

CG-200

MODULAR VIDEO CHARACTER GENERATOR

- Insert a character message over an external video feed. Ideal for circuit identification or video messaging system.
- **16 message, field programmable character generator.** Each message can have up to **15 lines with 30 characters** and is retained in a battery-backed RAM for up to 10 years.
- Insertion of a **vertical interval character ID** into external video (Optional).

AB-200

AUTOMATIC BYPASS & KEEP ALIVE SWITCH to AUTOMATICALLY TEST & ID Four Video Circuit

- Automatically monitor 4 video channels. If the video signal goes off the air or if the video circuit is inactive an alternate video signal is switched onto the line automatically. The system uses sync recognition and is not fooled by white noise of off air signals.
- Ideal for Satellite, Microwave, Off-air Antenna and Cable TV Headend applications. If you loose a video feed, automatically put up an emergency message or alternate video signal.

SPECIFICATIONS

SPECIFICATIONS TS12-CARD

Conforms to the RS-170A specification.
Exceeds the RS-250C Short-haul specification.

Video output impedance.....75 Ohms
Differential gain.....< +/- 0.25 %
Differential phase.....< +/- 0.25 degrees
Chrominance to luminance gain .....< +/- 0.25 %
Chrominance to luminance delay .....< +/- 2.5 n sec.
Luminance amplitude accuracy.....< +/- 0.25 %
Frequency response to 5 MHz.....< +/- 0.25 %
Ringing..... < +/- 0.5 %
Tilt ..... < +/- 0.1 %
Signal to noise.....< -84 dB
Vertical interval test signals (VITS).....NTC-7 Composite Line 18 Fields 1,2;
NTC-7 Combination Line 17 Field 1
Character generator, user-programmable .....32 characters
Character generator message retention .....up to 10 years, lithium battery-backed RAM
Audio output impedance, balanced.....50 Ohms
Tone frequency.....1 KHz
Audio output level .....-60 dBu to +10 dBu
Audio synchronizing signal.....0.5 Hz click
Distortion.....< 0.05%
Power dissipation .....1.2 Watts, max.

SPECIFICATIONS AB -200

Auxiliary Video input .....Differential, Hum Canceling, Buffered, Loop-thru
Number of channels.....4
Video detection .....Sync recognition
Switch over delay after loss of video .....4-6 seconds
Failure indicators .....4 front panel LEDs
Video switch.....Low loss video relay
Primary signal continuity.....In the event of power loss signal path maintained

ORDERING INFORMATION

- **Model TS12-CARD**
  (Modular 10 Bit NTSC Test Signal Generator Card) with 16 NTSC video test signals, user- programmable character generator, 5 black burst outputs and audio tone.
- **Model AB-200**
  (Modular Four Channel Automatic Bypass) with buffered auxiliary video input to automatically monitor four video circuits.
- **Model CG-200**
  (Modular Video Character Generator) with 15 lines of 30 characters inserted over external video.

10 Bit Series of NTSC Test Signal Generators

SUMMARY

- 10 bit digital video test signal generation exceeding the RS-250C Short-haul specification.
- 12 NTSC video test signal including 5 MHz Line Sweep, **NTC-7** Composite, NTC-7 Combination, Multiburst, Multipulse and (SIN X)/X.
- 95 to 100 IRE RAMP to measure Signal-to-Noise (S/N) and Signal-to-Quantizing Noise (S/Q) in digital video systems as recommended by ANSI standard **T1Q1.5/91-205R2**. Ideal for Digital Video Fiber Optics and **DS-3** Telephone Compressed Video systems. **Option -RAMP**
- Vertical interval test signals (VITS), NTC-7 Composite and NTC-7 Combination, **VM700ATM** compatible. Option **-VITS**
- Loop-through of external video and stereo audio.
- Automatic By-pass of external video and stereo audio. When using the Automatic By-pass feature external video and stereo audio are looped through the device. If the external video is interrupted or lost, a video test signal, character ID and stereo tone are switched onto the line automatically. Option **-AB**
- 16 message, field programmable character generator. Each message is 32 characters and is retained in a battery-backed RAM for up to 10 years. Option **-M**
- Insertion of a vertical interval character ID into external video.
- Stereo audio tone, 3 frequencies, XLR or quick release screw terminal connectors.
- Lip-sync, audio and video synchronizing signal.
- 2 outputs, test signal output and Black Burst output.
- 12 hour DC operations with 4 AA batteries, external 6-20 VDC or 115VAC with external wall-mount supply for the **TS12-10B** only. 115 and 230 VAC operation for the **TS12-10B-RM** only.
- Automatically maintain and trouble shoot video and audio circuits to RS-250C specifications.
- Ideal for Digital and Analog Fiber Optics, Distance Learning, Microwave, Cable TV, Broadcast TV and ENG.

TS12-10B STANDARD TEST SIGNAL SET

12 Transmission and Alignment Test Signals: SMPTE Color Bars, Cross Hatch, Red Field, (SIN X)/X, NTC-7 Composite, Gated Pulse and Bar, Modulated Stair Step, 5 MHz Line Sweep, NTC-7 Combination, Multipulse, FCC Multiburst and a matrix of Color Bars, Multiburst and NTC-7 Composite.

TS12-10B-RM STANDARD TEST SIGNAL SET

12 Transmission and Alignment Test Signals: SMPTE Color Bars, Cross Hatch, Red Field, FCC Multiburst, NTC-7 Combination, NTC-7 Composite, 5 MHz Line Sweep, Multipulse, Modulated Stair Step, Black Burst, (SIN X)/X and a matrix of Color Bars, Multiburst and NTC-7 Composite.

TS-12-10B and TS-12-10B-RM rear view

SPECIFICATIONS

Conforms to the RS-170A specification.
Exceeds the RS-250C Short-haul specification.

Video output impedance ..... 75 Ohms
Differential gain .....< +/- 0.25 %
Differential phase .....< +/- 0.25 degrees
Chrominance to luminance gain ..... < +/- 0.25 %
Chrominance to luminance delay..... < +/- 2.5 n sec.
Luminance amplitude accuracy .....< +/- 0.25 %
Frequency response to 5 MHz.....< +/- 0.25 %
Ringing .....< +/- 0.5 %
Tilt.....< +/- 0.1 %
Signal to noise..... < -84 dB
Vertical interval test signals (VITS) .....NTC-7 Composite Line 18 Fields 1,2;
NTC-7 Combination Line 17 Field 1
Character generator, user-programmable .....32 characters, 16 messages.
Character generator message retention ..... up to 10 years, lithium battery-backed RAM
Vertical interval character ID.....16 character insertion into ext. video.
Automatic by-pass, loss of video detection..... sync recognition
Audio output impedance, balanced..... 50 Ohms
Tone frequency .....400 Hz, 1 KHz, 8 KHz
Audio output level, adjustable ..... -60 dBu to +10 dBu
Right audio channel ID.....0.5 Hz click
Distortion .....< 0.05%
DC input voltage range, TS12-10B only ..... 6 - 20 VDC
Power dissipation ..... 1.2 Watts, max.
Battery operation, 4 AA batteries, TS12-10B only ..... up to 12 hours
AC operation, TS12-10B only .....wall-mount AC supply, included
AC operation, TS12-10B-RM only .....115 or 230 VAC
Dimensions, TS12-10B ..... 6 7/8" x 5 3/4" x 1 3/4"
Dimensions, TS12-10B-RM ..... 8" x 19" x 1 3/4"

ORDERING INFORMATION

- **Model TS12-10B**
  (Handheld 10 Bit NTSC Test Signal Generator) with 12 NTSC video test signals, 16 message user-programmable character generator, black burst output and 3 frequencies of stereo audio tone.

- **Model TS12-10B-RM**
  (Rack-mounted 10 Bit NTSC Test Signal Generator) with 12 NTSC video test signals, black burst output and 3 frequencies of stereo audio tone.

- **Options:**

-AB Automatic By-pass with loop-through of external video and stereo audio, TS12-10B-RM only.
-M 16 message, user-programmable, character generator with vertical interval character ID of external video, TS12- 10B-RM only,
-VITS Vertical Interval Test Signals.
-RAMP 95 to 100 IRE RAMP Test Signal.
-STAIR 5 Step Staircase.

Dual Video Loss Detector

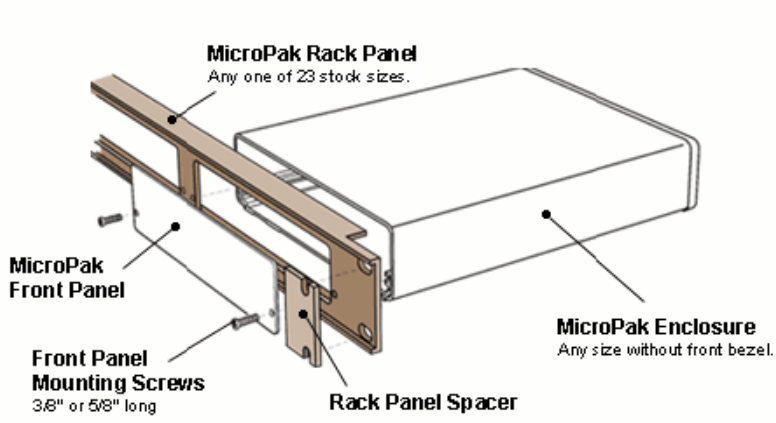
SUMMARY

. Detects video loss using sync detection.
. Detects extended periods of Black. Ideal for detecting an obstruction to camera lens.
. Detects extended periods of White. Ideal for detecting a camera blinded by a bright light.
. Supports 2 channels of video.
. Loop-through inputs.
. Back-porch clamping of input signal.
. Adjustable threshold for detecting Black and White trip points.
. Includes one alarm relay per channel.
. Alarm signals are available on quick-release screw terminal.
. Front panel LED alarm indicators.
. Front panel alarm reset.
. Operates from an external 12VAC wall-mount power supply.

ORDERING INFORMATION

VLD-2 : Dual Video Loss Detector
-RMT : option for the Triple Rack-mount Kit for 3 VLD-2 units.

Dual -RMD, Triple -RMT and Six -RM6 Position Kits



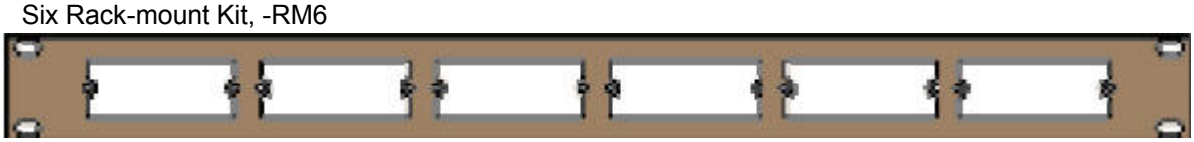
SUMMARY

. Any stand-alone unit can be rack-mounted using a RM kit.
. The .RMD kit hold TWO large sized units such as the DAM-4000, CWDM-2000-8, CWDM-2000-4¡¦
. The .RMT kit holds THREE mid sized units such as the DVM-2000, DAM-2000, DVM-2500...
. The .RM6 kit holds SIX small sized units such as the DTV-120, DTV-130, DV-1394¡¦
. Each kit includes Rack-mount spacers.
. The same front panel is used for both stand-alone or rack-mount configureations.
. Panel blanks are available for all sizes, -BLANK.

Dual Rack-mount Kit, -RMD

Triple Rack-mount Kit, -RMT

Six Rack-mount Kit, -RM6



ORDERING INFORMATION

-RM6	6 unit rack-mounting kit, mount 6 DTV-100/1500 in 1 rack unit
-BLANK	Blank panel for rack-mounting kit

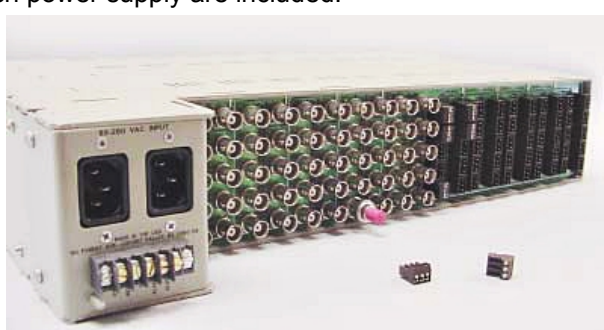
-RMT	Triple Rack-mount Kit (1 kit)
-BLANK	Blank panel for rack-mounting kit
-WALL	Wall-mount Kit (1 set)

-RMD	Dual Rack-mount Kit (1 kit)
-BLANK	Blank panel for rack-mounting kit
-WALL	Wall-mount Kit (1 set)

VIDEO, AUDIO, SDI, AES DAs, TEST SIGNAL & CHARACTER ID MODULAR UTILITY TRAYS

SUMMARY

- The model **UTIL-200** accommodates up to 10 modular Video DA, Character ID, Test Signal cards and 2 redundant power supplies, compatible with **Grass Valley 8500/8800/8900 trays.**
- The model **UTIL-200-AUDIO** accommodates up to 10 modular Audio DA cards and 2 redundant power supplies. Audio interfaces with 3 pin, screw terminal, phoenix connectors
- The model **UTIL-200-AV** accommodates up to 5 modular Video DA, Character ID, Test Signal cards, up to 5 modular Audio DA cards and 2 redundant power supplies.
- Each video DA includes a differential loop-through input and 8 outputs fully **GRASS VALLEY™** compatible.
- All video distribution amplifiers have a minimum Gain range of +/- 6 dBs and an output isolation of greater than 40 dBs.
- Clamping, Hum Eliminating, Precision Equalizing, Test Signals, VU Meters and Fiber Optic cards available for all applications.
- Each **video DA** card has a front panel **Video Present LED indicator** for quick **signal continuity verification.**
- Each **audio DA** card has a front panel **Bi-colored LED VU** or an optional **10 segment LED VU meter.**
- Tray mounts in standard **2 rack-unit** space with dimensions of 14” x 19” x 3.5” (L x W x H).
- The standard power supply PS-200-AC has a universal input voltage range from **85 to 265 VAC**. No need to set voltage selector switches; simply plug in and forget.
- The 48 VDC power supply PS-200-48VDC has an input voltage range from **36 to 60 VDC**. Ideal for Telephone Company central office applications.
- External alarm relay contacts and front panel LED indicators for each power supply are included.



UTIL-200-AV-2RU-AC Audio & Video Tray

ORDERING INFORMATION

Model **UTIL-200-2RU-AC**, Video, Modular Utility Tray, one 85-265 VAC Power Supply & Line Cord.
Model **UTIL-200-AUDIO-2RU-AC**, Audio, Modular Utility Tray, one 85-265 VAC Power Supply & Line Cord
Model **UTIL-200-AV-2RU-AC**, Audio/Video, Modular Utility Tray, one 85-265 VAC Power Supply & Line Cord
Model **UTIL-200-2RU-48VDC**, 10 Slot, 2 RU, Modular Utility Tray, one 36-60 VDC Power Supply.
Model **UTIL-200-AUDIO-2RU-48VDC**, Audio, Modular Utility Tray, one 36-60 VDC Power Supply & Line Cord
Model **UTIL-200-AV-2RU-48VDC**, Audio/Video, Modular Utility Tray, one 36-60 VDC Power Supply & Line Cord
Model **PS-200-AC**, Modular 85-265 VAC Power Supply & Line Cord for 200 series trays.
Model **PS-200-48VDC**, Modular 36-60 VDC Power Supply for 200 series trays.

UTIL-200-DVM **VIDEO, AUDIO, SDI & AES MODULAR FIBER OPTIC UTILITY TRAY**

UTIL-200-FIBER **SDI MODULAR FIBER OPTIC UTILITY TRAY**

SUMMARY

- The UTIL-DVM and UTIL-200-FIBER Trays supports up to 10 fiber optic modular cards.
- The **UTIL-200-DVM Video, Audio, SDI & AES Tray** supports the **DVM-2200** Video, 6 Audio and 3 Data Transport Cards, the **DVM-3000** Video, 2 Audio and 8 Data Transprot Cards, the **DTV-220/225/230/235** SDI Transport Cards, the **DTV-201/210F** SDI Fan-out and Reclocking Cards, the **DAM-2200** 6 Audio and 3 Data.

•Transport Cards and the **AES-2200** 6 AES/EBU and 3 Data Transport Cards.
•The UTIL-200-DVM includes 3 BNC I/Os and 1 25 Pin D-type Connector per channel.
•The **UTIL-200-FIBER SDI Tray** supports the **DTV-220/225/230/235** SDI Transport Cards and the **DTV- 201/210F** SDI Fan-out and Reclocking Cards ONLY.
•The UTIL-200-FIBER includes 6 BNC I/Os per channel.
•Universal AC operation for **85-265 VAC** and Telco DC operation for **48 VDC**.
•Tray mounts in standard **2 rack-unit** space with dimensions of 14” x 19” x 3.5” (L x W x H).
•The standard power supply PS-200-AC has a universal input voltage range from **85 to 265 VAC**. No need to set voltage selector switches.simply plug in and forget.
•External alarm relay contacts and front panel LED indicators for each power supply are included.

UTIL-200-DVM-2RU-AC Video, Audio, SDI & AES Fiber Tray

(The UTIL-200-FIBER tray has no 25 pin D-type connector & has 6 BNC I/Os)

ORDERING INFORMATION

UTIL-200-FIBER-2RU-AC	Analog, Digital and Fiber, 10 Slot, 2RU, Modular Utility Tray, with one 85-265 VAC Power Supply & Line Cord. (Supports the DTV200 series only)
PS-200-AC	Modular 85-265 VAC Power Supply & Line Cord for 200 series trays
UTIL-200-FIBER-2RU-48VDC	Analog, Digital and Fiber, 10 Slot, 2 RU, Modular Utility Tray, with one 36-60 VDC Power Supply. (Supports the DTV200 series only)
PS-200-48VDC	Modular 36-60 VDC Power Supply for 200 series trays
UTIL-200-DVM-2RU-AC	Analog, Digital and Fiber, 10 Slot, 2RU, Modular Utility Tray, with one 85-265 VAC Power Supply & Line Cord. (Supports the DTV200 and DVM2200 series only)
PS-200-DVM-AC	Modular 85-265 VAC Power Supply & Line Cord for 200 series trays
UTIL-200-DVM-2RU-48VDC	Analog, Digital and Fiber, 10 Slot, 2 RU, Modular Utility Tray, with one 36-60 VDC Power Supply. (Supports the DTV200 and DVM2200 series only) (Delivery 10 Weeks)
PS-200-DVM-48VDC	Modular 36-60 VDC Power Supply for 200 series trays (Delivery 10 Weeks)

AEA-1 XLR Audio Break-out Panel for the MULTIDYNE VAS-1000, Grass Valley TEN XL™ and Compatibles

Adapt the audio 37 pin D-type connector of the MULTIDYNE VAS-1000, Grass Valley TEN XL", Performer SD" and many other industry standard Routing Switchers to XLR connectors. The 10 balanced audio inputs and audio output are converted to 11 XLR connectors.

The MEC-10X3 10 by 3 XLR Audio Break-out Panel is used to bridge the audio inputs of 3 or more MULTIDYNE VAS-1000 or compatible routing switcher for a 10 by 3+ matrix. The panel system supports up to 3 channels of audio. The connections are made using 9 ribbon cables. Multiple panels can be used to form 10 by 6, 10 by 9& switcher matrixes. The XLR Audio Break-out Panels greatly simplify the installation and modification of audio routing systems. All the audio connections are made with XLR terminated cables instead of soldering the audio wires into a tiny D-type connector.

ORDERING INFORMATION:

AEA-1 Recessed mount (3"), Mono XLR Audio Interface Panel. (1 required per switcher audio channel)
AEA-1-FLAT Flat mount, Mono XLR Audio Interface Panel. (1 required per switcher audio channel)
MF-370 Male to Female Ribbon Cable. (1 required)
MEC 10X3 10 by 3 Audio Bridging Adapter Panel with 33 XLR connectors.
MF-370 Male to Female Ribbon Cable. (9 required)

AIA-8x8 XLR Audio Break-out Panel for the Full Line of Leitch Routing Swichers

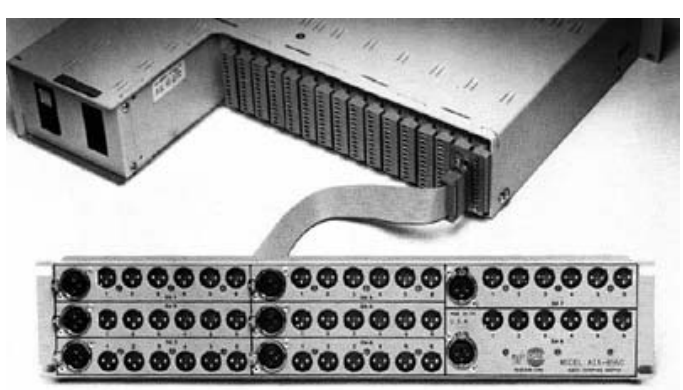
Adapt the 25 pin D-connectors of the full line of **Leitch Routing Switchers to XLR connectors** using the **MULTIDYNE AIA-8X8 XLR Break-out Panel** and two ribbon cables. Each adapter breaks out 8 audio inputs and 8 audio outputs into a one rack-unit panel of 16 XLR connectors. The pin outs of all the Leitch routing Switchers are the same. The adapter panels will work with a 8 by 1 up to a 64 by 64 routing switcher.

ORDERING INFORMATION:

AIA-8X8 XLR Audio Break-out Panel for 8 inputs and 8 outputs. Requires 2 MM-300 Ribbon Cables.

Additional XLR Break-out Panel Systems

Adapt the audio screw terminals of the **Grass Valley™ TEN 20™** or **20 TEN™** Compact Routing System to XLR connectors.
- **Model AIA-2010.**



Adapt the audio screw terminals of the **Grass Valley 8550** and **8560** Audio Distribution Trays to XLR connectors.
- **Models AIA-8550** and **AIA-8560.**

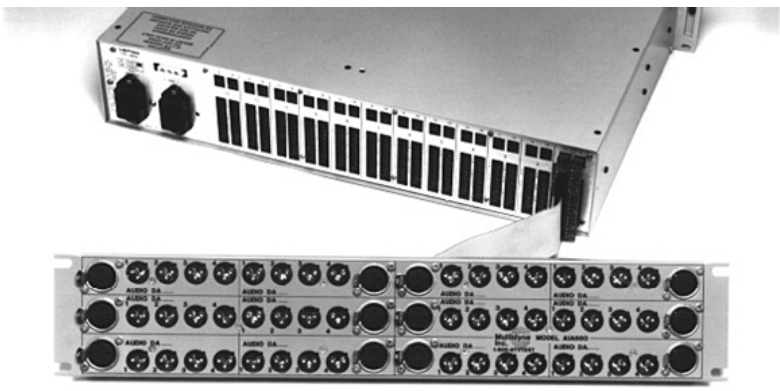
Adapt the audio screw terminals of the **Videotek™ Omni Frame™** Audio Distribution Trays to XLR connectors. The interface is neatly accomplished using ribbon cables to adapt the screw terminals or D-Type connectors to a panel housing XLR connectors.
- **Models AIA-8550** and **AIA-8560.**

Adapt the audio screw terminals of the **Leitch™ FR-883** and **FR-884** Audio Distribution Trays to XLR connectors. The interface is neatly accomplished using ribbon cables to adapt the screw terminals or D-Type connectors to a panel housing XLR connectors.
-**Model AIA-880.**

ORDERING INFORMATION:

AIA-8550 for Audio Interface Adapter Panel, rack-mount XLR chassis (requires 1)
DAI-8550 for DA Interface Board, screw terminal to ribbon cable adapter (requires 8)
MM-250 for Male to Male Ribbon Cable (requires 8)
Available for the 20 TEN™ Routing Switcher.

AIA-880 XLR Audio Break-out Panel for the Leitch FR-883 and FR-884 Audio DA Trays



Adapt the audio screw terminals of the **Leitch¢â FR-883 and FR-884 Audio Distribution Trays to XLR connectors** using the **MULTIDYNE¢â AIA-880 XLR Break-out Panel**. The interface is neatly accomplished using ribbon cables to adapt the screw terminals to two panels housing 60 XLR connectors each.
The system converts all 120 screw terminal connectors to 120 XLR connectors in 4 rack units.
The Audio Interface Adapter greatly simplifies the installation and modification of audio distribution systems. All the audio connections are made with XLR terminated cables instead of direct wiring to screw terminals.
XLR Audio Break-out Panels are also available for the **Grass Valley™ 8550 & 8560 Audio DA Trays**, **TEN XL™, 20 TEN™, Performer SD™, Videotek™ Omni Frame™,** the **Full Line** of **Leitch Routing Switchers,** the **MULTIDYNE VAS-1000 Routing Switchers** and **compatibles.**

ORDERING INFORMATION

Adapter package for the FR-883 Frame:
1 AIA-880, Audio Interface Adapter, XLR Break-out with 60 XLR connectors.
4 DIA-880, DA Interface Adapter Board; screw terminal to ribboncable adapter.
4 MM-300, Male to Male Ribbon Cable.

Adapter package for the FR-884 Frame:
2 AIA-880, Audio Interface Adapter, XLR Break-out with 60 XLR connectors.
12 DIA-880, DA Interface Adapter Board; screw terminal to ribbon cable adapter.
12 MM-300, Male to Male Ribbon Cable.